# AMERICAN AARISANI ARISANI

NOVEMBÉR 1943

American Artisan's Plan
For the Equitable Distribution of 200,000
Replacement Furnaces
In 1944 . . . . Pages 30-41

Facts on Materials For Controls . . . . . Page 42

FHO's Formula for Rating
Furnaces and Determining Capacities . . . Page 47

RESIDENTIAL AIR CONDITIONING 'ARM AIR HEATING . SHEET METAL CONTRACTING

ESTABLISHED



#### . . available Now from PERFEX

Everybody in the business knows that proper control of the heating plant is the first and most important step in fuel conservation. The government recognizes this fact, and has permitted use of needed materials for making controls.



Accordingly, Perfex is now prepared to make prompt shipment of standard controls upon receipt of properly rated orders.

#### PERFEX CORPORATION

402 West Oklahoma Avenue, Milwaukee 7. Wisconsin



# STEEL-In Ryerson Stock for Immediate Shipment

Your nearby Ryerson Steel-Service plant carries every kind of steel in stock... bars, plates, shapes, sheets, hot rolled, cold finished, carbon, alloy and stainless, etc.

Our engineers and metallurgists will be glad to work with you on any problem of steel supply, application or fabrication. Call Ryerson first... whether for day to day requirements or an emergency rush order.

In case you have not yet received one, we will be glad to send you the current Ryerson Stock List. Other Ryerson service literature is also available on request.

#### JOSEPH T. RYERSON & SON, INC.

Plants at: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City

RYERSON STEEL-SERVICE

# AMERICAN ARTISAN

Covering All Activities in Residential Air Conditioning and Small Commercial Cooling, Warm Air Heating, Sheet Metal Contracting and Fabricating

#### WITH WHICH ARE MERGED

FURNACES
SHIPET METALS

AND



I. D. Wilder, Editor

A. A. Kennedy, Assistant Editor

Vol. 112, No. 11 November, 1943 Founded 1880

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#### In This Issue

In the September issue we presented a study of the furnace replacement needs of AA readers and projected these figures to show the number of replacement furnaces needed in 1944. In October, we carried this a step further and reported, from Washington, what OCR, WPB, OPA were doing to meet this situation.

If we get, as reported in October, 200,000 replacement furnaces, and if we should have, in 1944, some 300,000 replacement furnaces to be sure every home owner is comfortable—we are going to have to stretch these 200,000 furnaces. We must continue to repair and patch.

to repair and patch.

But if 200,000 replacement furnaces are equitably distributed there will be few owners suffering from lack of heat—and we will be doing something to help the war. To insure equitable distribution of 200,000 furnaces calls for a PLAN. We must know where furnaces are needed and get that needed number to that area.

Beginning on page 30 we present such a plan and explain why it is needed and how it can be set in operation.

This suggested plan—or any plan—calls for patriotic and voluntary cooperation by every manufacturer, jobber and dealer in the industry. American Artisan believes that 90 per cent of the needed distribution can be satisfied voluntarily, through our usual channels of distribution.

The other 10 per cent—which represents the really tough problems can be met through use of a "pool" or "reserve" of furnaces from which a dealer can draw when he can't get a furnace normally—and do it legally. We invite comment and suggestions.

The photograph used on the Sheet Metal Section cover shows portable grinding wheels removing surplus weld materials on diesel-electric motor hoods in General Electric's Erie works.

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BUILDINGS-INDUSTRIAL BUILDINGS HOMES and HOUSING PROJECTS



N BELLEVILLE

SAL-MO Supply Duct is SAFE—Approved and Listed for Safety, Permanence and Heating by UNDERWRITERS' LAB-ORATORIES, INC. COMPACT — Exclusive folding feature saves space in cars, in storage and in transfer to job; saves time in erection. INSULATING - Built-in insulation assures years of fuel saving. LIGHT -Weighs less than 8 oz. per square foot. STRONG-Withstands Mullens Test of over 400 pounds per square inch. MOISTURE-RESISTANT-Fabricated entirely with insoluble adhesives; high humidity will not separate the various layers.

#### FOR WARM AIR HEATING, VENTILATING AND AIR CONDITIONING SYSTEM DUCTS

Manufactured in 26 standard sizes (areas from 26 square inches to 448 square inches in convenient 4-foot lengths) allowing for all types of installations. It is also furnished in flat sheets containing 11 to 24 square feet which can be easily rolled or scored on the job.

#### Other Well Known Sal-Mo Products Include:

Asbestos Papers, Aircell Papers, Ductboard, Pipe Coverings, Millboard, Tank Jackets and Asbestos Furnace and Boiler Cements.

In a Large Church Building. Sal-Mo Supply Duct Was Used Throughout.



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# Badge of Merit

Since 1866, hundreds of dealers and thousands of home owners have learned that the WEIR-MEYER trade mark on heating equipment is truly a Badge of Merit. And since Pearl Harbor, the ranks of those who are enthusiastic about WEIR-MEYER have been increased by untold numbers. These new friends are engineers and maintenance men who know WEIR-MEYER from the thousands of new installations for the Armed Forces. No wonder we're proud of our record!

#### WAR ORDERS FIRST

Even with the lifting of the ban on furnaces for essential civilian use, war orders come first. High-rated war requirements come ahead of AA-5 orders for replacement. These civilian needs are, however, being filled as quickly as possible.

But—postwar is a different story. It is definitely not too early to think of the dealership you want to enjoy. Find out now about WEIR-MEYER—the line whose prewar reputation has been strengthened and enhanced by its war record to speed Victory.

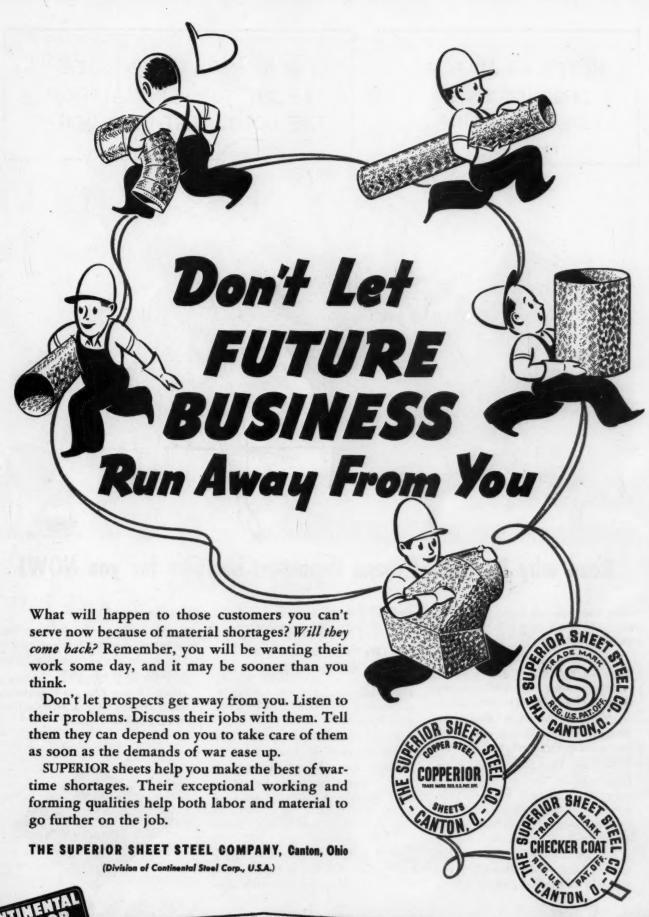
# THE MEYER FURNACE COMPANY

WEIR and MEYER FURNACES — AIR CONDITIONERS

for COAL — GAS — OIL

PEORIA 2, ILL., U.S.A.

KEEP ON BUYING WAR BONDS TO HASTEN POSTWAR DAYS



CONTINENTAL STEEL CORPORATION

HERE'S AN AD FOR DUST-STOPS\* IN LIFE MAGAZINE.

AND HERE'S A FOLDER ABOUT FUEL-SAVING FROM THE LOCAL DUST-STOP DEALER



#### Read why Dust-Stops mean important business for you NOW!

Right now you can enjoy the biggest filter sales of the year with Dust-Stop Air Filters. Here's why:

This is the peak season for the filter business. It's the time of year when most every home owner will actually do something about his heating problem.

It's the time when every forced-warmair furnace owner in your community should change his filters to help save fuel.

Right now, Dust-Stop national advertising is telling these people about the importance of changing filters regularly. It is also telling them about the fuel-saving advantages of Dust-Stop Air Filters.

This advertising has been appearing and will continue to appear in the Saturday Evening

Post, Life, Better Homes and Gardens, House Beautiful, and American Home.

#### We help you tie in with this advertising

Dust-Stops furnish you with the biggest and best set of free Dealer Helps in the filter business.

You get free, attractive mailing pieces, return post cards, window and counter displays. You get free newspaper ad mats, radio announcements, furnace labels, telephone directory listings . . . in fact everything to tell prospects to come to you for their Dust-Stop filters.

> Also, the new catalog of filter sizes enables you to take orders by phone and-if you wish

to fill those orders by mail.

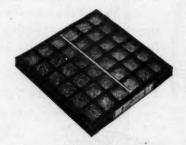
So, get in touch with your Dust-Stop distributor today. Tell him you want to get in on the proved sales plan, "Pulling Profits out of the Air."

Owens-Corning Fiberglas Corporation, Toledo 1, Ohio. In Canada, Fiberglas Canada, Ltd., Oshawa, Ontario.

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ca



FIBERGLAS'

STOP\* AIR FILTERS



### Girls had to be Half Fiji — Half Eskimo

#### Until Allen Engineers Stepped In . . .

THE EXCESSIVE heat and humidity inherent in this big commercial laundry's operation posed them a real problem. On certain days the plant's central area would be a steaming jungle while windows and outer walls were glazed with ice. Employment agencies could not supply the Fiji-Islander-Eskimo combination needed to endure these extremes. Then Allen came in.

Competent Allen men made a thoroughgoing study of the plant submitted a recommendation to management. They got the go-ahead, cooperated with the local sheet metal contractor on the installation. Results — as expected — were delivered. The "as expected" is in no wise boastful. Allen men "measured" the moisture to be removed from this particular plant—provided ventilation "measured" for the job. Gone was the South Seas humidity in the center of the building and North Pole icicles on the walls and windows.

Allen personnel have a long history of first hand acquaintance with

the engineering principles and construction practices involved in ventilation. They are specialists in the removal of excess heat, dust, fumes and moisture from commercial and industrial buildings of all types. Their experience has qualified them to meet and master ordinary and extraordinary ventilation problems with equal facility. Allen men are always available to cooperate with you in determining ventilation needs and installing the proper gravity and/or power equipment to meet the specific situation. The Allen Corporation, 9751 Erwin Avenue, Detroit 13, Michigan.

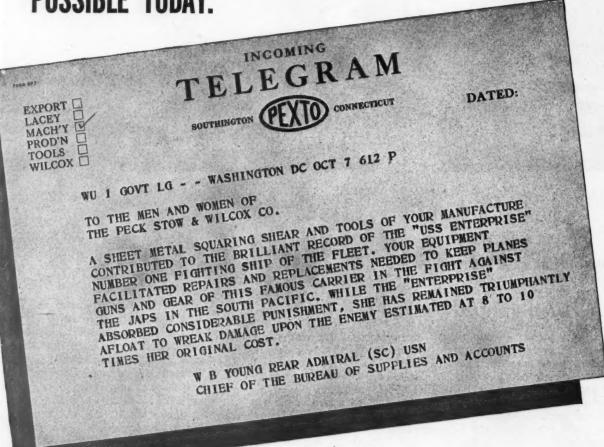
THE Allen

CORPORATION



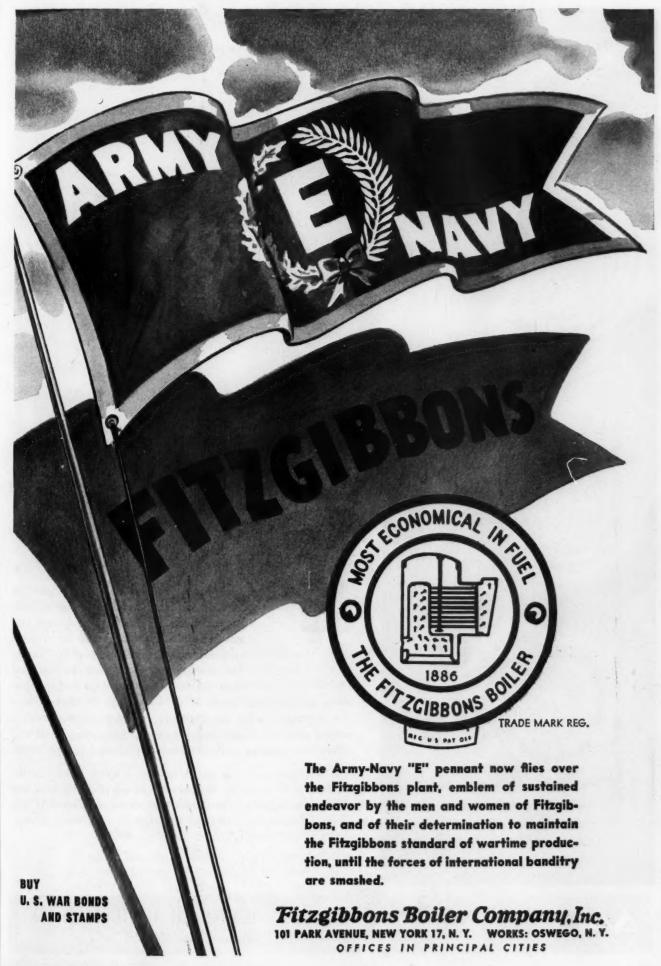
ENGINEERED VENTILATION FOR INDUSTRY

THE TELEGRAM REPRODUCED BELOW GRAPHICALLY SHOWS WHY PEXTO, WITH TREMENDOUS PRODUCTION TO MEET THE NEEDS OF OUR COUNTRY'S ARMED FORCES, CANNOT SERVE OUR COMMERCIAL CUSTOMERS' INTERESTS AS EFFICIENTLY AS IN THE PAST OR AS WE WISH WERE POSSIBLE TODAY.



### THE PECK, STOW & WILCOX COMPANY

SOUTHINGTON, CONNECTICUT, U.S.A. SINCE 1785







AMERICAN AIR FILTER COMPANY, INC., 355 CENTRAL AVE, LOUISVILLE, KY.

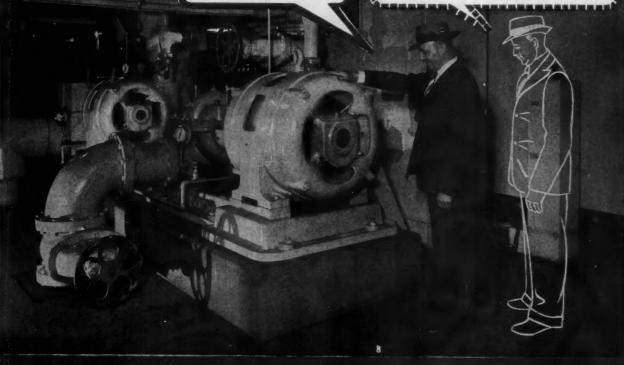
of "AAF In Industry."

IN CANADA, DARLING BROTHERS, LIMITED, MONTREAL, P. Q.

of air filtration and dust control equipment, send for your copy

### Take a Look at TOMORROW - Joday!

Mr. Now: I didn't know Century made motors that big. Mr. Postwar: I'm glad to know that I can specify Century for practically all my motor requirements.



BIG MOTORS Too!

Century Motors are available that not only accurately match the demands of the load, but also provide for proper protection against surrounding operating and atmospheric conditions.

There's a real advantage—now and in the future—in the fact that Century Motors are built in a wide range of types and sizes, from fractional horsepower up to and including 600 horsepower.

Today, under the rigid demands of Wartime production, Century is developing and building finer motors in an even wider variety of types and sizes than in over forty years of motor manufacturing.

If you have not received our new bulletin on polyphase motors, write for it now. Specify Century.

#### CENTURY ELECTRIC CO.

1806 Pine Street St. Louis 3, Missouri Offices and Stock Points in Principal Cities





FORM J NOW READY 2 TO 15 H. P.

334

# LOOKING FOR WAYS TO

prepare for post-war business? get more service agreements? make new contacts with home-owners? help your customers make the most of fuel supplies? do your part in fuel conservation?

### This G-E booklet will help you!

HERE'S the handy 40-page booklet that is helping G-E Dealers to keep the good-will of their customers... to make new contacts and clinch more service agreements . . . to lay a sound foundation for post-war business.

"Tips on Fuel Conservation" gives home owners just the kind of information they want—no matter what type of fuel they use. Be sure a copy is in the hands of every one of your customers and prospects. It will show them how to get the most heat out of limited fuel supplies. It will make your part in the fuel conservation program more effective. It will help you to keep your present business-and pave the way for future markets.

This booklet is one part of General Electric's program to protect its dealers. Advertising in American Home and Better Homes & Gardens—featuring the booklet—is another part. Make the most of these helps . . . call your G-E Automatic Heating Distributor today for a supply of "Tips on Fuel Conservation."

General Electric Company, Heating Division 35311, Bloomfield, New Jersey.



GENERAL & ELECTRIC

HEAT LOSS

HEATING SYSTEMS

SERVICE CALLS

GENERAL SELECTRIC

AUTOMATIC HEAT



Hear the General Electric Radio Program: The "G-E ALL-GIRL ORCHESTRA", Sundays, 10 P. M., E W/T, N B C . . . "THE WORLD TODAY" News, Every Weekday 6:45 P. M., E W T, C B S.

### RIGHT NOW-He's married to a Corsair!

-And if he's like a lot of boys we know, that Corsair is in his mind all day, and he dreams about it all night.

But one of these days the props are going to get knocked out from under our little pals of the Axis, and "he" is going to find himself at loose ends, feeling better than he's ever felt in his life, due to the training he's had, and Rarein' to Go!-and we know where he'll go.

He's going to pass up that Corsair and marry the girl of his dreams-he's going to find himself thinking about that little home with all the Wonderful Conveniences that the Post War World holds in store for him.

And we at Penn Boiler-busily grinding out the materials of war to hasten that day-We're going to be ready for him!

Comes V-day-

YOU CAN EXPECT GREAT THINGS FROM PENN BOILER!

PENN BOILER & BURNER MFG. CORP.

LANCASTER, PENNA.

# then perhaps he said to himself A TEN-MONTH DELIVERY



BIG PIECE OF NEWS the Prime Minister read to the House of Commons—the 10-months' delivery of a couple hundred ships.

Again the old formula: BIG name in the NEWS...made big by Big Production.. production made big by RECOURSE TO ARC

WELDING (remembering Webster's short definition of RECOURSE as "a going to for aid or protection").

So the President has written the formula into the history of the world: "Here there had been developed a welding technique... with speed unequaled."

THE LINCOLN ELECTRIC COMPANY . CLEVELAND I, OHIO

AME

15 to

"A Welding Technique" be said \* \* \* \* "with speed unequalled in the history of merchant shipping" ... and this, Mr. Prime Minister, is what he meant:



SHOP FABRICATION. Ships welded on a production line by assembly line methods-faster welding by positioning the welding-pre-fabrication of large sections-upside-down assembly-dozens of shortcuts make up this technique, recourse to which has revolutionized shipbuilding.

MASS PRODUCTION. If ships can be put on a mass production basis, think of the speed and economy in producing products less bulky. If speed alone were the only benefit of welding, recourse to it might be debatable. But consider these additional benefits:

#### LESS STEEL

osts money.

#### LESS HULL FRICTION

On these 200 ships, re- A welded Liberty ship leaving 18% more cargo carcourse to arc welding New York would reach Sicily rying capacity is prosaves 375,600 tons. 40 hours quicker than its vided by weight-cutteel is critical. Steel rough-skinned sister of equal ting through recourse

#### INCREASED CARGO

to are welding.

horsepower. America's greatest natural recourse ARC WELDING

FRANKLIN D. ROOSEVELT.

15 to 20 Ships a Month

# The Savoy-Plaza's report on SHEET COPPER... after 15 years' service



That's what New York's fashionable Savoy-Plaza has to say about the 40,000 pounds of Anaconda Sheet Copper installed for roofing, gutters, flashings, etc., during construction of the hotel in 1928.

Recent years, especially with their problems of wartime maintenance and upkeep, have proved over and over again the soundness of the investment. During these years there have been no replacements, and no maintenance has been necessary other than that normally required by a building of this type.

Also, the 200,000 pounds of Anaconda Brass Pipe used for the entire hot and cold water plumbing system has proved to be a splendid investment.

#### THE AMERICAN BRASS COMPANY

General Offices: Waterbury 88, Connecticut
Subsidiary of Anaconda Copper Mining Company
InCanada: ANACONDA AMERICAN BRASSLTD., New Toronto, Ont.

Anaconda Copper & Brass

\* New Methodo \* New Facilities

\* War Production

Assure You of Better,
More Salable
MUFLLER FURNACES

Salt bath type hardening furnaces in which small

HE color picture on the preceding page illustrates a battery of chemically neutral salt-pot type heat-treating furnaces installed in the Mueller plant. In these gas-fired furnaces, steel forgings for tank tracks are heat treated by immersion in molten salt at a temperature of 1,600 degrees. This operation imparts higher physical properties to the steel. Temperature is controlled within 5 degrees. Parts are quick-cooled in oil quenching tanks shown in the right foreground. These tanks are Mueller design and construction. In the background are two 500-gallon degreasing tanks filled with an alkaline solution which is maintained at 190 degrees

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In the next operation, the parts are heated to 900 to 1,000 degrees in high velocity, recirculating gas-fired tempering furnaces, in order to even out grain structure and relieve stresses within the metal. Total gas consumption of the Mueller plant is now in excess of 5 million cubic feet per month.

by means of Mueller Gas-fired Boilers.



Equipment, methods, and standards utilized in Mueller's war production program assure future heating and air conditioning equipment that will be far superior to pre-war standards.

L. J. MUELLER FURNACE COMPANY 2005 West Oklahoma Avenue, Milwaukee 7, Wisconsin

MUELLER Milwaukee



UNITED STATES ARMY

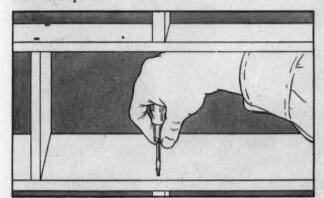
The Army Ordnance Banner—
awarded to Mueller for outstanding performance in war production.



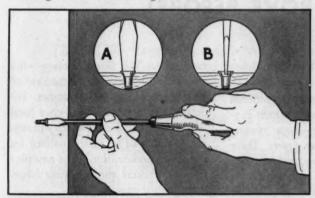
# TOOL NOTES "How To Do It" Information For Crescent Tool Users

#### No. 16 . . . . PICKING THE PROPER TOOL FOR THE JOB

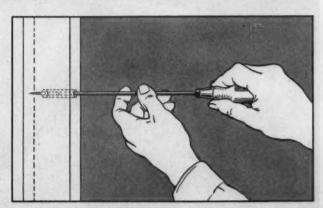
To the uninitiated, a screwdriver is just a screwdriver, but to the trained mechanic, the proper screwdriver for the job is the only screwdriver to use. Below are some examples:



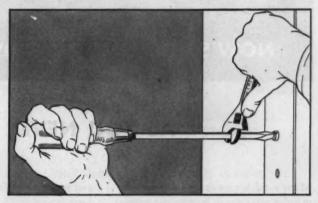
When working between obstructions, don't try to use a long screwdriver at an angle. Use a CRESCENT SHORT SCREWDRIVER. It will do the job better without marring the screw head and with less effort. Example: working between shelving.



Select the screwdriver with the proper width of blade to handle the particular size of screw being used. Inset A shows the correct blade width which is approximately the same as the screw head diameter. Inset B shows how the thickness of the blade should conform to the width of the screw head slot.



When inserting a screw in a deeply countersunk hole or electrical work where limited clearances will not admit a wide blade, use a CRESCENT ELECTRICIAN'S AND CABINET SCREWDRIVER, available in lengths varying from 61/2" to 161/2". Example: working in countersunk holes with short screws.



Where extra tightening pressure must be exerted, use a CRESCENT SQUARE ROD SCREWDRIVER in conjunction with a CRESCENT WRENCH as shown above. Example: tightening machine screws or oversize wood screws.

#### MAIL THE COUPON FOR FREE REPRINTS

This is No. 16, in Crescent's TOOL NOTES Series. These informative advertisements providing practical information for users of hand tools, are available either punched to fit a standard 3-ring binder or suitable for bulletin board and classroom use. Coupon request will receive prompt attention.

CRESCENT TOOL COMPANY, JAMESTOWN, N. Y.

Give Wings to Work	C	RES	CENT	OT 7	OLS

Crescent Tool Co., Jan	nestown, N. Y. G-
Please send your "	TOOL NOTES" Series
of for Bulletins	for 3-ring binder
Name	
Address	
City	State



#### AS YOU NEVER DROVE BEFORE!

Many a soldier owes his life to a commander who drove him to the utmost in battle—never let him slacken for a single fatal instant! And after the war, many a worker will owe his economic safety to a leader who drove him continuously for higher Pay-Roll allotments for the purchase of War Bonds!

Despite higher taxes and prices, the average worker still has more money than ever before—particularly on the basis of the *family* income. With others in the family earning, too, just let the worker 'figure it out for himself', and he usually will realize that *now* he can

put more into War Bonds than he has been doing.

That's why the Treasury Department has set new quotas for the current Pay-Roll Allotment Drive—quotas running about 50% above former figures. These quotas are designed to reach the new money that's coming into the family income. Coming from millions of new workers . . . from women who never worked before . . . from millions who never before earned anything like what they are getting today!

The current War Bond effort is built around the *family* unit, and the Treasury Department now urges you to or-

ganize your War Bond thinking—and your War Bond selling—on the basis of your employees' family incomes. For details, get in touch with your local War Finance Committee which will supply you with all necessary material for the proper presentation of the new plan to your workers through your labormanagement committees.

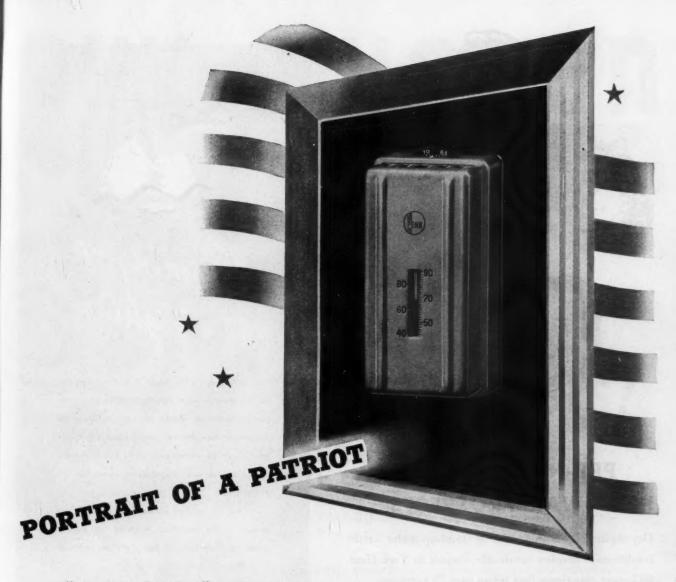
Today about 30,000,000 wage earners, in 175,000 plants, are buying War Bonds at the rate of nearly half a billion dollars a month. Great as this sum is, it is not enough! So turn-to today! Get this new family income plan working!



This Space is a Contribution to America's

All-Out War Effort By

AMERICAN ARTISAN



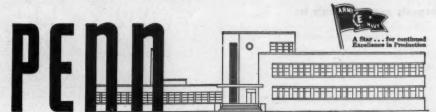
"ZIG-ZAG heating" is uncomfortable and wastes fuel. With supplies of coal and oil more critically short than ever, conservation is a necessity and a patriotic duty.

As a fuel saver Penn Temtrol is a patriot of first rank. This heat anticipating thermostat "senses" changes before they occur, holds temperature closely to the desired level, eliminating wide swings between "on" and "off" operating periods.

Set at the fuel-saving level which patriotism pre-

scribes, Penn Temtrol provides more comfort, because our bodies soon condition themselves to lower temperatures, if steadily maintained.

During the war Penn Temtrol is keeping your customers sold on automatic heating. After Victory, the complete line of Penn heating controls, further improved by the research and experience of our war-time service, will open new avenues of profit to dealers and contractors. Penn Electric Switch Co., Goshen, Ind. In Canada: Powerlite Devices, Ltd., Toronto, Ontario.



#### AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS



#### PRE-HEATING POST-WAR PROSPECTS

Developing oil burning units to stand-up under battle conditions is another invaluable chapter in York Heat oil burner experience that began over 25 years ago.

After our Army and Navy have settled things with the "new order", York will again go back to industrial and domestic heating. Right now, York is planning the finest oil-burning units in the history of the industry.

To pave the way for the profitable years ahead for York Heat dealers the name York Heat is being kept in front of millions of people every month.

YORK HEAT advertisements appear regularly in:

AMERICAN HOME House and GARDEN

HOUSE BEAUTIFUL TIME (Canada)

BETTER HOMES and GARDENS



"Putting on the heat" is nothing new far us. Twenty-five years ago, York Oll Burners were heating buildings, plants, and homes. Little did we suspect then, the day would come when York Heat would be warming-up Uncle Sam's cirplane of the world.

For the present, all our plant-facilities are devoted to the war-effort. Much of this work is producing York Burners, for operation under all sorts of complex war-time conditions.

This vast source of experience, crowded into a few years' time, can't help but influence the ail industrial and degistric units, you will find York in performance and economy.

The more Bonds you buy now, the more you will be able to enjoy the new things to come.

### YORK HEAT



K-SHIPLEY, INC.,

# DUX-SULATION



#### **OUR GOVERNMENT ASKS YOU** TO CONSERVE FUEL

What better way can you serve the war effort than by installing asbestos protected DUX-SULATION, the all purpose insulation,giving your shop, office or plant the benefit of more even temperature

Asbestos protected DUX-SULATION definitely saves Fuel by preventing heat loss from ducts and carrying heat to the parts of a building that need it. Don't waste it en route where the temperature may already be above normal.

If all manufacturing plants thru-out America with bare ducts would apply DUX-SULATION this winter, thousands of tons of vitally needed coal would be saved without the need of reducing room temperatures below normal.

DUX-SULATION can be given any type of surface treatment and is attractive when installed. (See photo below.)

DUX-SULATION will deaden the metallic sounds and noises in your ducts,-also it will prevent CON-DENSATION and RUST.

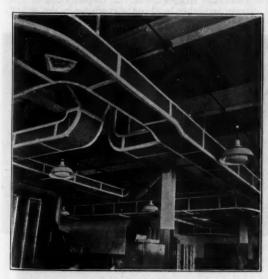


a flexible insulating blanket 36' thick having a K factor .27 B.t.u. Comes complete with corner tape and adhesive for cementing on to sheet metal duct work. DUX-SULATION comes 36" wide in a roll containing 100 square feet. Easy to apply and a very efficient insulation against temperature losses, condensation and noise travel. Will not rot, chip or crack.

Keep top efficiency in your office, laboratory or plant throughout the heating months ahead by installing DUX-SULATION now. Order from your local Heating Supply House.

Immediate shipment in any quantity. Get the most out of your Heating System.

Write for Bulletin No. 407-A



# The women

They know that this is war, and that the price of victory will be high. They have sent off their sons, brothers and husbands to the armed forces, and they are coming out of beauty shops and offices, stores and homes, and are taking war jobs in steel mills and shipyards. The deft hands that in peacetime wielded the skillet and the dryer are now managing the boring mill and the welding torch—and to very good effect.

Ever try keeping traffic flowing smoothly in and out of the main entrance of a big steel plant? Ever knock a "hot top" off an ingot? Or rough-bore a gun forging? Or weld a ship's hull? Not women's work? Women are every day doing these and dozens of other jobs in Bethlehem shipyards and steel plants, and doing them superbly.

At Bethlehem and Lackawanna, at Baltimore, at Fore River and Hingham, on the Pacific Coast—and at other locations where this company operates plants and ship-yards—former clerks and beauty-shop operators, salesgirls and housewives, are applying themselves to their new, challenging tasks with wonderful spirit and skill. They are helping to swell the mighty output of steel and ships and ordnance. The results of their efforts are being painfully felt in Tokyo and Berlin. Hats off to them!



Woman "patrolman" at a Bethlehem steel plant. Here is a job calling for plenty of tact and skill! Women are serving on patrol duty at gates, parking lots, offices, and other locations with efficiency and aplomb.



Once a dancer, now she runs a machine in a Bethlehem shipyard.

This "buggy" operator is hauling naval shells in a Bethlehem plant.

Upswept hairdo, red finger-nails, don't keep this girl welder from doing a man-size job at a Bethlehem shipyard.



## Every Furnace Repaired Means More Metal for War Equipment

FURNACE dealers must face the fact that there is going to be a definite shortage in the number of new furnaces available for next winter. New furnaces, therefore, to replace worn-out units are going to be scarce and hard to get.

This makes it more than ever important to do everything possible to repair furnaces now in use and put them in good working condition.

Every furnace repaired means metal and man-power saved to produce more ships, planes, tanks and guns. It also means the all important conservation of fuel, because an efficiently operating furnace will give more heat with less fuel consumption. This provides your opportunity to contribute your part in aiding the war effort. Check every RYBOLT furnace in your community and urge your customers to have their furnaces repaired now. And remember, you can do a better job by using genuine RYBOLT repair parts, made from original patterns with quality materials. They'll fit right and give the right kind of service because they are identical with parts used in the original RYBOLT unit.

But be sure to send in orders promptly as we are getting behind on shipments. Get your share of this worthwhile business. It's profitable for you and helps the war effort. Send in your orders today.

Save or Slave— Buy War Bonds

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THE RYBOLT HEATER COMPANY

615 MILLER STREET

ASHLAND, OHIO



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### THE RYBOLT HEATER COMPANY

615 MILLER STREET

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ACUIAND OHIO



You wouldn't expect a rope to go through the eye of a needle. Neither will the large amount of air necessary to heat a home pass through the restricted passages of a clogged filter. It just won't go through. Clogged filters are wasteful. Clean filters save fuel by allowing the proper quantity of heated air to get into the rooms where it is needed. In view of the present fuel shortage it is imperative that filters be inspected now, and either cleaned or replaced.

When filters need replacing, be sure to ask your local jobber for "Detroit" Air Filters, and take advantage of these desirable features.

ECONOMY-Patented cellular design gives more filtering capacity per

FREE AIR FLOW-Uniform air distribution assures free flow with maximum filtering.

DUST CAPACITY - Thoroughly impregnated with special non-dripping compound to retain dust collecting ability indefinitely.

ODORLESS-Adhesive material is absolutely adorless and will not turn rancid.

LONG LIFE-Entire thickness of filter used in cleaning, thus providing long and efficient filtering.

\*STRENGTH-Selected materials and sturdy construction prevent sagging. No danger of small particles being carried into air stream.



POLLEN-Highly effective in providing relief for persons allergic to airborne pollen.

CLEANING-Guaranteed factory cleaning and renewal service when necessary—a further economy.

\*No critical materials are used in the construction of Detroit Air Filters.,

Made in all standard sizesspecial sizes to order.

Oil is Ammunition

USE IT WISELY!

#### ETROIT LUBRICATOR COMPANY

General Offices: DETROIT, MICHIGAN

radian Representatives - Railway and Engineering Specialties Limited, Montreal, Toronto, Winnipeg



Vol. 112

# Gmerican ERTISAN

No. 11

#### We Should Plan Now For 1944 Distribution

In the editorial in the October issue, forewording the report on what the Washington agencies are doing about the furnace situation, it was stated that dealers would have to stretch the furnaces available for replacement in 1944 if all home owners are to be kept warm.

This warning was also offered, in several guises during the last 12 months. Now in this issue we take the statement out of the realm of generalities and bring it specifically down to cases—by counties. We hope that everyone in the industry will study the clearly indicated problems presented by the analysis which follows.

This whole problem comes about because of some past happenings which seemingly bear repetition.

More than a year ago, there were in some Washington agencies certain individuals who believed in concentration for the sake of concentration. Why these persons believed in concentration is beside the point, but we can cut the matter short by saying that they had pink or red tendencies.

These concentrators were powerful enough to sell their notions to higher-ups who ordinarily would have known better but who, because of a burning desire to win the war, looked with favor on any scheme which seemed to get critical materials for our war machines.

So this industry faced for several months the threat of concentration despite the fact that we knew, we said, and we did our darndest to convince authorities that a furnace will last just so long and must be replaced and that with millions of furnaces in use it naturally follows that a certain number of furnaces have to be replaced every year. These furnaces which need replacement each year, unfortunately for the theorists, have no recognition of time, place or need—they just wear out.

We were not concentrated, but we were radically cut back on materials, thereby reducing manufacturers' business volume and causing them to seek war contracts. So some producers went out of furnace production while others filled up their plants with war work. Manpower came along to aggravate the problem further and last summer Washington woke up to the fact that there were tens of thousands of furnaces needed for the coming winter and there was no way to get them.

Fortunately, the friends we had in Washington plus the new men who took over last summer, have made every effort to rectify the situation—today we have recognition as a producing and installing industry for a very essential civilian need and we are going to be permitted to produce and install a goodly percentage of the furnaces which need replacement.

But these needs were not acknowledged early enough to do much good in 1943 and it will be only through this industry's utmost patriotic effort that the problem can be licked in 1944.

On pages following AMERICAN ARTISAN has taken the area of the country having the most furnaces (and the area where good heating is most needed) and set up what amounts to a rationing program. The basis for the set-up is explained. The result is, to all purposes, just what a rationing agency would do. The final conclusion is that on the basis of number of furnaces in use, age of these furnaces, severity of the heating season, we may anticipate a certain number of replacements required in each county. This number has been calculated and tabulated as explained a couple of pages farther along.

In this editorial we wish to point out that—200,000 furnaces is much more satisfactory than the 50,000 furnaces we talked about last Christmas, but, even so, we still must distribute these furnaces equitably and we must still repair and patch whenever we can.

Not until another 100,000 furnaces at least are available for replacement can dealers go forth and sell whenever they know a new furnace will do a better job than the old one. For the present—until we know for certain that we will get more than 200,000 furnaces—we must stretch our supplies.

Finally, there is urgent need for a great deal of patriotism among contractors. If we all work together, 1944 looks pretty good.

Flash!

Effective November 2, manufacturers of steel furnaces are granted a 9 per cent increase in their selling prices. This is granted by Amendment 18 to Order A-1, MPR 188. The increase may be passed on to the consumer, jobber, dealer. Coal-fired, oil-fired, gas-fired; both gravity or forced air units, are included.

r, 1943

Of
We
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200,000
Replacement
Jurnaces
in 1944

N THE September issue, American Artisan published a survey showing that 3,843 readers of this publication needed for necessary replacements between August I and December 31, 1943, 130,000 cast iron and steel furnaces, 240,000 firepots, 370,000 grate bars, 63,000 grate rings, 50,000 combustion sections and proportionate quantities of other items. Projected for a full year and for all warm air heating contractors, the need probably approaches 300,000 furnaces. This 300,000 furnaces would probably satisfy every contractor and every home owner.

Since any survey of needs is useless unless someone does something about the situation, the October issue carried a direct report from Washington agencies (OCR, WPB, OPA) showing what these agencies were actually doing to fill these needs as reported by AA readers or to meet the requirements as analyzed by the agencies' own studies of needs.

The report which follows constitutes the third in the series and, to the best of our ability at the moment, shows what must be done by our industry if we intend to keep home owners comfortable in 1944.

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As reported in the October issue, OCR confidently expects to make enough materials available in 1944 to produce 200.000 replacement furnaces. The majority will be cast iron, but cast iron manufacturers may not be able to produce 200,000 furnaces if the existing manpower and production limitations continue next year, so the balance, whatever it may be, will be produced by the steel furnace manufacturers.

But, there looms a much greater problem—one which will tax the ingenuity and patriotism of the whole industry if it is to be met next year.

That problem is—distribution.

As we pointed out in the October issue—All Washington agencies dealing with replacement furnaces are deeply concerned with this problem of distribution. And so is every other Washington agency dealing with materials for all consumer durable goods.

Why? The reason is easy to find. Consumer durable goods have now been off the market for a year or more. All existing inventories are now used up. Goods are not being produced or, if so, in such small trickles that the demand far exceeds the supply. Customers have plenty of money and snap up every piece of durable goods immediately.

If this industry gets 200,000 furnaces in 1944 for replacement purposes and if, as reported to AA, warm air furnace dealers see an actual minimum need for 300,000 replacement furnaces, someone is going to go without furnaces.

Unless—this industry can voluntarily distribute 200.000 furnaces so that every home owner who needs a furnace can get one; if any home owner goes unheated because the dealers in his community can not get furnaces, then Washington will have to step in and apply rationing or some other form of distribution control.

As stated, adequate distribution, whether a voluntary industry basis or by controlled rationing is not an easy problem to solve. Following are a few of the problems, which must be solved before distribution can be considered satisfactory:

I—A furnace manufacturer, primarily, is not interested in a county as a geographical area. His interest is in a dealer in that county, or in that area, and he is accustomed to thinking of distribution in terms of dealers and dealer purchase volume. But under the problem posed today, the home owner and the number of homes using furnace heat in a county determines how many furnaces are needed for replacement and the job is to get that many replacements into that county.

2—It is already apparent that in many counties there is one dealer with a good source of supply who will get more furnaces than he is entitled to or would get under rationing because he is an "exclusive" account of his manufacturer. Even if that manufacturer could deliver furnaces to another dealer in the county—he would not because of this exclusive franchise. There must be set up some basis for interchange of furnaces.

3—It is already apparent that there are counties where all dealers are "accounts" of manufacturers who are not now making furnaces or can not ship. As a result that county goes without furnaces. It must be made possible for such dealers to get furnaces without endless letter writing and solicitation.

4—There are already hundreds of counties where one or two dealers will have furnaces and perhaps a dozen go without, yet those two dealers, because

of manpower troubles, can not install all the rurnaces the county is entitled to. Who is going to install? Better distribution is called for.

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5—Quite likely, there will be some counties without any dealers. For installation purposes, where will the furnaces for that county be assigned, and who will put them in?

6—In a certain important war production county, right today, one dealer has so many furnaces he can and is selling to other dealers. Dozens of other dealers, in this same county, do not have a single furnace and some have not had a furnace in the last six months. The reason is the dealer's furnace manufacturer was forehanded in getting materials and so is making lots of furnaces. Such unequalities must be righted if all hardship cases are cared for.

7—Since every furnace installed must have been put in by a dealer and since every dealer must get his furnaces from a manufacturer or through a jobber—it follows that there was a chain from furnace producer to home owner. But no manufacturer has such a chain direct to every county and, usually, each manufacturer has a concentrated sales volume in a certain state, or area, or in a few counties in a few states. Each manufacturer, then, if left to follow his customary distribution channels does not have any way of knowing if his production is adequate for or is following the proportionate needs of an area.

This industry's determination to do a patriotic job and past experience seems to assure that approximately 90 per cent of the job can be done through the customary manufacturer-jobber-dealer distribution system. If every dealer, jobber, manufacturer will determine to follow as closely as possible some equivalent to rationing (see pages following) we can feel sure 90 per cent of the job will be taken care of.

It is the other 10 per cent, or so, which is causing, and will cause, all the trouble. For instance, a dealer in a county, has a hardship case. His source of supply cannot ship a furnace. No other dealer can take the job. The problem is to set up some way by which that home owner is kept warm.

The situation at present has evolved into a "let's-get-by-this-way" plan of meeting the problem. For example, there have been instances where a home owner, through the dealer, has tiled a WPB-25/0 application for a furnace. WPB-25/0 is intended to be an application to begin construction under L-41. But when approved the application can be rated up to AA-3, so WPB, knowing this, has approved a few such applications and the owner with AA-3 gets a furnace. This is all right for a tew isolated cases, but it would be a mad scramble if every dealer suddenly began to use the method.

Again, WPB has just announced that hardship cases needing furnaces may file a PD-IX application which, if granted, carries an AA-4 rating. But, since PD-IX was intended to be a jobbers instrument to get inventory, this appears like a stop-gap measure and will work occasionally, but not constantly. This AA-4 is high enough to get a turnace ahead of the P-84's AA-5, but if put into general practice might ultimately result in every dealer trying to get turnaces under PD-IX instead of P-84 and that would be meaningless because the AA-4's would soon be no better than AA-5. Finally, PD-IX was intended to be used only between a dealer and a producer (dealer to manufacturer) and not from dealer to jobber. It jobbers all begin to build inventory on hardship cases, P-84 again becomes useless.

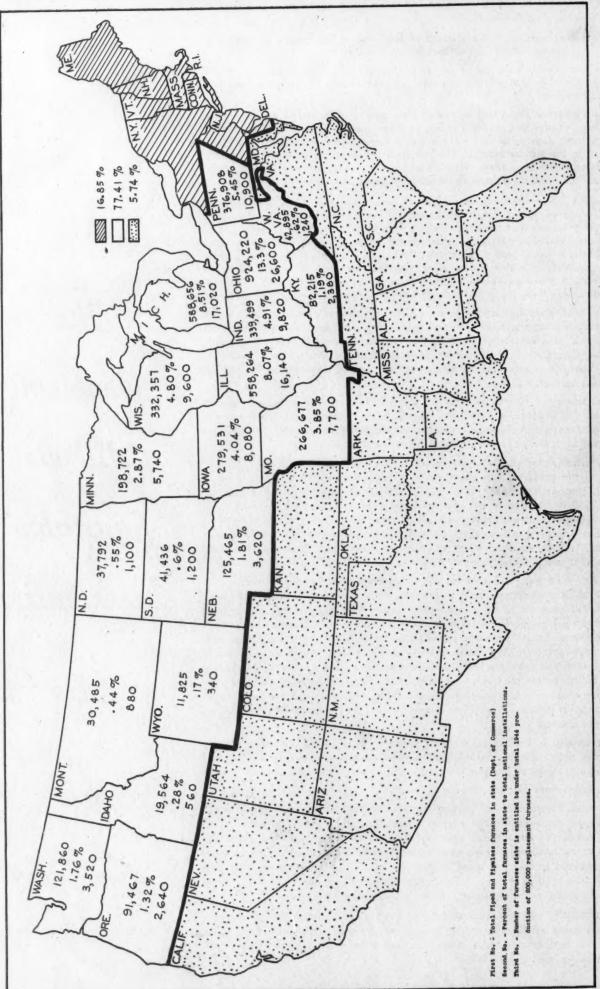
The trouble with all these schemes, seems to be that the procedure quickly becomes indiscriminate and thereby renders useless all lower ratings so that the higher ratings of the new procedure are, in turn, rendered useless.

Therefore what can be done?

To solve the problem of getting furnaces to the 10 per cent group which cannot get turnaces through normal distribution, there seems to be required some number of turnaces set aside by directive tor hardship cases. These turnaces to be released through some agency which keeps count of the furnaces so distributed so that the "pool" is not over-sold. This same agency must pass on the true need of the application. And the procedure under which the application is made must be clear-cut, above board and quick acting.

This industry will unquestionably do its best to make these 200,000 replacement furnaces satisfy all hardship cases, but we need some plan, now, which will insure furnaces for those cases which are beyond our best patriotic effort. The base for such a plan follows:

The
Problem
Will Be
Equitable
Distribution



Map prepared by OCR showing furnaces in use and the need for replacement planning to meet need indicated by usage

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# Here Is How the 200,000 Jurnaces Must Be Divided Up

In addition to the tabulations by counties for 181/2 states which follow American Artisan has also tabulated the remaining 291/2 states. These tabulations, made for the first time, will be available as industry data. If you wish information on a county or state write us.

F OUR industry is to solve—voluntarily—the problem of equitable distribution for the 200,000 replacement furnaces promised for 1944, so that no home owner will be without heat and so that there will be no need for "rationing", it will be necessary for the industry to set up a program of allocation by areas that will assure equitable distribution.

On following pages AMERICAN ARTISAN presents the base for such a program. We show, in the 18½ states designated by OCR as the "heavy user" area, the number of furnaces which would be allocated to each county if a "rationing" program was put into effect.

These county figures were determined as follows: From the Census Bureau, Department of Commerce, 1940 study of homes, we have taken the number of "piped" and "pipeless" furnaces in use—by states (Line 1 on the map, Item 1 in the tabulation). For each state, this number of furnaces in use in that state becomes a percentage (Line 2 on the map and Item 2 in the state tabulation) of the furnaces in use in the whole country.

Then using 200,000 furnaces as a base, we have used this percentage to find the number of furnaces each state will be entitled to. This is Item 3 in the tabulation and Line 3 on the map.

In the tabulation by states following, the number of furnaces in use in each county (Item 4 in the tabulations) is divided into the number of furnaces in use in the state to determine the percentage of furnaces in the county to the state as a whole (Item 5 in the tabulations). Then this percentage of the furnaces allocated to the state is the number of furnaces each county is entitled to (Item 6 in the tabulations).

By this method we determine the number of replacement furnaces each county will be entitled to on the basis of furnaces in use if we get the 200,000 furnaces reported in the October issue.

On the basis described, our tabulation shows that the area including the 18½ states has some 65 per cent of all the furnaces in use in the country. Office of Civilian Requirements' tabulation shows the same area needing 77.41 per cent of the replacements. To this extent AMERICAN ARTISAN'S study is at variance with OCR and, of course, with this discrepancy to begin with the final results by counties are also less than OCR's by about 10 to 12 per cent.

Since AMERICAN ARTISAN'S figure is lower than OCR's, this 18½ state area may then expect AA's number of furnaces as a minimum and OCR's number as the maximum. If in a given county AA shows 100

furnaces for 1944 the maximum may be 110 furnaces on a 200,000 furnace base.

We cannot calculate the furnaces by counties by any other method than the one described. OCR's method is described as follows:

"From the 1940 Census figures, we determined the number of furnaces in use in each state and the number burning coal or coke. Degree day demand or the heating demand for the month of January for each state was derived from the A.S.H. & V.E. Guide for 1941. Solid fuel usage for each state was determined from information published by Anthracite Industries and industry practice.

"Then, using the states of Ohio, Illinois, and Indiana as the basing area, an average was taken of the January heating demand in that area. The probable replacement factor for each state as compared to the basing area was calculated higher or lower than the basing area dependent on the January heating demand alone. Since it is industry knowledge that a warm air furnace will last longer using anthracite fuel than using bituminous fuel, the basic replacement factor for bituminous fuel was set at 4 per cent of existing furnaces, and for anthracite usage at 3 per cent. These basic replacement factors were then multiplied by the corrective factor for peak demand requirements. When the factor replacement, so calculated, was applied as a percentage of the solid fuel furnaces in use in each area, the result gave the number of coal-fired furnaces that would be required for replacement."

To apply this OCR formula precisely, by counties, would require innumerable calculations and the final result would, in our opinion, not be worth the time inasmuch as we hope the 200,000 furnaces will be a minimum and that more furnaces will be permitted.

Readers will find the use of these tabulations simple. For example, select your county, turn to the state tabulation and the county and find the number of furnaces allocated under the plan. This will be the number of furnaces all dealers in the county should count on getting for replacement purposes in 1944. Any additional furnaces obtained through greater allocations of materials in 1944 will be just so much dividend.

It is hoped that this study will furnish readers with some usable base for determining the number of replacement furnaces available in 1944. If each dealer will then try his best to repair whenever possible and spread these replacement furnaces patriotically we may find that 200,000 furnaces is far better than the situation in 1943 and that in most areas the true hardship cases can be taken care of.

# Furnaces Installed by States and Counties and Replacement Furnaces Available in 1944 (On Basis of 200,000 Production)

	ÔHIÔ	
No. I	Total Furnaces Installed	924,220
No. 2	% of National Total	13.3%
No. 3	Allotment of 200,000 Quota	26,600

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
		.03	8
Adams		.95	253
Ashland		.48	128
Ashtabula		1.14	303
Athens		.25	66
Auglaize		.21	56
Belmont		1.01	269
Brown		.05	13
Butler		1.70	452
Carroll		.21	56
Champaign		1.21	50
Clark		.21	322 56
Clermont		.20	53
Columbiana		1.36	362
Coshocton		. 37	98
Crawford		.57	152
uyahoga		20.82	5,538
Darke		.28	74
Deflance		.23	61
Delaware		.22	58
Erie	4,314	.47	125
Fairfield	3.277	.35	93
ayette		.12	32
ranklin		6.77	1,801
Culton		.29	77
allia		.07	19
Geauga		.23	61 85
reene		.36	96
Hamilton		9.88	2,628
Hancock		.39	104
Hardin		.16	42
Iarrison		.26	69
Henry		.16	42
lighland		.14	37
locking		.08	21
Iolmes		.14	37
Iuron		.46	122
ackson		.06	16
efferson		1.18	314
cnox		.30	80
ake		.80	213
awrence		.10	26
Licking		.76	202
ogan		.31	82 561
Lucas		2.11 4.85	1,290
Madison		.10	26
Mahoning		4.89	1,301
Marion		.53	141
Medina		.57	152
Meigs		.07	19
Mercer	1,195	.13	34
Miami		.52	138
Monroe	451	.05	13
Montgomery		5.34	1,420
Morgan	364	.04	11
Morrow	900	.10	26
Muskingum		.85	226
Noble		.05	13
Ottawa		.23	61
Paulding		.05	13
Perry		.17	45
Pickaway		.14	37
Pike	210	.02	5
Portage		.82	218
Preble		.17	45
Putnam	1.261	.14	37
Richland		1.18	314
Ross		.27	72
Sandusky		.60	160
Scioto Seneca		.35	93
	2	.63	167
		91	20
Shelby	1,919	.21 5.03	56 1,338

OHIO (Cont'd)				
Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)	
Summit	. 72,747	7.87	2,093	
Trumbull	. 23,257	2.52	670	
Tuscarawas		1.18	314	
Union		.13	34	
Van Wert		.23	61	
Vinton		.02	. 5	
Warren		.22	58	
Washington		.15	40	
Wayne		.77	205	
Williams		.33	88	
Wood		.37	98	
Wyandot		.19	50	

	MEST AIKRIMIY	
	Total Furnaces Installed	
No. 2	% of National Total	.62%
No. 3	Allotment of 200,000 Quota	1,240

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Barbour	221	.52	6
Berkeley	1,102	2.57	32
Boone		.15	2
Braxton		16	2
Brooke		7.21	90
Cabell		4.69	58
Calhoun		.02	
Clay		.08	i
Doddridge	******	.17	2
		1.65	21
Fayette		.05	1
Gilmer		.24	3
Grant			5
Greenbrier		.42	
	162	.38	5
	4,497	10.48	130
Hardy		.10	1
Harrison	1,795	4.18	52
Jackson	24	.06	1
Jefferson	448	1.04	13
Kanawha	3,781	8.81	109
Lewis		.87	- 11
Lincoln		.01	
Logan		.32	4
McDowell		.57	7
Marion		9.16	114
Marshall		4.94	61
Mason		.69	9
Mercer		2.92	36
Mineral		1.56	19
Mingo		.19	2
Monongalia		6.43	80
Monroe		.03	*:
Morgan		.37	
Nicholas		.19	2
Ohio		14.83	184
Pendleton		.02	**
Pleasants		.13	2
Pocahontas		.14	2
Preston	847	1.97	24
Putnam	46	.11	1
Raleigh	597	1.39	17
Randolph		.92	11
Ritchie		.10	1
Roane		.05	1
Summers		.31	4
Taylor		1.10	14
Tucker		.28	3
Tyler		.11	1
Upshur		.42	5
Wayne			
Webster		1.47	18
		.14	2
Wetzel		.30	4
Wirt	10	.02	22
Wood		4.59	57
Wyoming	158	.37	5

# PENNSYLVANIA (WEST)

No. I	Total Furnaces Installed	376,908
No. 2	% of National Total	5.45%
No. 3	Allotment of 200,000 Quota	10,900

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Allegheny	146,935	38.98	4,249
Armstrong		1.58	172
Beaver	22,799	6.05	659
Bedford	. 1,531	.41	45
Blair	16,801	4.46	486
Butler	8,563	2.27	248
Cambria		1.81	197
Cameron		.09	10
Centre	1,988	.53	58
Clarion	1.922	.51	56
Clearfield		1.19	130
Crawford		1.64	179
Elk		.51	56
Erie		6.45	703
Fayette		3.40	371
Forest	110	.03	3
Franklin		1.23	134
Fulton		.04	4
Greene		.53	58
Huntingdon		.47	51
Indiana		1.55	169
Jefferson		.94	102
Lawrence		4.49	489
McKean		.72	79
Mercer		3.67	400
Potter		.13	14
Somerset		.93	101
Venango		. 1.14	124
Warren		.74	. 81
Washington		4.91	535
Westmoreland		8.60	937

# MICHIGAN

No. I	Total Furnaces Installed 588,656	
No. 2	% of National Total 8.51%	
No. 3	Allotment of 200,000 Quota 17,020	

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Alcona	152	.03	. 5
Alger	341	.06	10
Allegan	4,102	.70	119
Alpena	1,794	.30	51
Antrim	358	.06	10
Arenac	213	.04	7
Baraga	274	.05	9
Barry	2,129	.36	61
Bay	7,995	1.36	232
Benzie		.07	12
Berrien		2.23	380
Branch		.54	92
Calhoun		2.71	461
Cass		.35	60
Charlevoix		.12	20
Cheboygan		.07	12
Chippewa		.28	48
Clare		.07	12
Clinton		.44	75
Crawford		.03	5
Delta		.37	63
Dickinson		.42	71
Eaton		.71	121
Emmet		.17	- 29
Genesee		5.92	1.008
Gladwin		.06	10
Gogebic		.41	70
Grand Traverse		.29	49
Gratiot		.45	77
Hillsdale		.51	87
Houghton		.52	89
Huron		.36	61
Ingham		3.90	664
Ionia		.59	100
		.06	100
		.22	37
Iron			54
Isabella		.32	
Jackson		2.65	451
Kalamazoo		2.75	468
Kalkaska		.02	3
Kent		7.14	1,215
Keweenaw		.04	7
Lake		.02	3
Lapeer		.32	54
Loelanau	293	.05	9

# MICHIGAN (Cont'd)

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Lenawee	6.549	1.11	189
Livingston	1,943	.33	56
Luce		.03	5
Mackinac	147	.02	3
Macomb	8,180	1.39	237
Manistee		.18	31
Marquette		.38	65
Mason		.25	43
Mecosta		.17	29
Menominee		.23	39
Midland	0.000	.34	58
Missaukee		.05	9
Monroe		1.03	175
Montcalm	0.400	.37	63
Montmorency		.01	2
Muskegon		1.86	317
Newaygo		.19	32
Oakland		5.90	1.004
Oceana		.13	22
Ogemaw		.06	10
Ontonagon		.06	10
Osceola		.13	22
Oscoda	400	.02	3
Otsego		.03	5
Ottawa		1.61	274
Presque Isle		.10	17
Roscommon		.02	3
Saginaw		2.03	346
St. Clair		1.36	232
St. Joseph		.73	. 124
Sanilac		.26	44
Schoolcraft		.06	10
Shiawassee		.79	134
Tuscola		.41	70
		.58	99
Van Buren		2.14	364
Washtenaw		37.23	6.337
Wayne		.27	46
Wexford	1,001	.46	40

# WASHINGTON

No. I	Total Furnaces	Installed	121,860
No. 2	% of National	Total	1.76%
No. 3	Allotment of 2	00,000 Quota	3,520

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Adams	233	.19	67.
Asotin		.34	119
Benton	000	.23	81
Chelan		2.04	718
Clallam		.34	119
Clark	B 204	2.94	1,035
Columbia		.16	56
Cowlitz		.88	310
Douglas	005	.27	95
Ferry		.04	14
Franklin		.29	102
Garfield		.07	25
Grant		.14	49
Grays Harbor		.92	324
Island	le s	.06	21
Jefferson		.10	35
King	WW 444	47.32	16.657
Kitsap		2.53	891
Kittitas	100	.40	141
Klickitat	000	.25	88
Lewis	450	.54	190
Lincoln		.36	127
Mason		.19	67
Okanogan		.44	155
Pacific		.16	56
Pend Oreille		.13	46
Pierce		9.63	3,390
San Juan		.04	14
Skagit		.82	289
Skamanie		.06	21
Snohomish		3.00	1,056
Spokane		13.52	4,759
Stevens		.32	113
Thurston		1.83	644
Wahkiakum		.07	24
Walla Walla		1.80	634
Whatcom		2.21	778
Whitman		1.12	394
Yakima		4.25	1,496
Lamillet	0,110	1,00	71.14.0

# ILLINOIS

No. I	Total Furnaces	Installed	558,264
No. 2	% of National	Total	8.07%
No. 3	Allotment of 20	0,000 Quota	16,140

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotmen of State Quote (No. Furnaces
Adams		1.21	195
Alexander		.12	19
Bond		.14	23
Boone		.40	65
Brown		.06	10 141
Bureau		.87	5
Calhoun		.39	63
Cass		.21	34
Champaign		1.55	250
Christian		.49	79
Clark		.11	18
Clay		.09	15
Clinton		.14	23 90
Cook		28.59	4,615
Crawford		.18	29
Cumberland		.04	6
De Kalb		.97	157
DeWitt	1,571	.28	45
Douglas		.18	29
DuPage		2.65	428
Edgar		.30	48
Edwards		.04	6 32
Fayette		.16	26
Ford	1,619	.29	47
Franklin	1,671	.30	48
Fulton		.89	144
Gallatin		.02	3
Greene		.15 .24	24 39
Hamilton		.02	3
Hancock		.34	55
Hardin		.02	3
Henderson		.09	15
Henry		1.13	182
Iroquois		.46	74
Jackson		.38	61
Jasper		.04	6 45
Jersey		.12	19
Jo Daviess		.31	50
Johnson		.02	3
Kane		3.95	638
Kankakee		1.81	212 40
Kendall		1.63	263
Lake		2.26	365
La Salle		2.38	384
Lawrence		.18	29
Lee		.79	128 123
Livingston		.76 .45	73
McDonough		.45	73
McHenry		.85	137
McLean		1.96	316
Macon		2.43	392
Macoupin		.54	87
Marion	17,897	3.20	517
Marshall		.21	63
Mason		.20	32
Massac		.06	10
Menard	622	.11	18
Mercer		.33	53
Monroe		.09	15
Montgomery		.38	61
Moultie		.12	100 19
Ogle		.71	115
Peoria		4.61	744
Perry		.17	27
Piatt		.17	27
Pike		.15	24
Pope		.01	2
Putnam		.06	10
Randolph		.28	45
Richland	. 558	.10	16
Rock Island		3.35	541
St. Clair		3.13	505
Saline		.20	32
Sangamon		2.73	441
Scott		.08	13 13
Shelby		.19	31
Stark	971	.17	27
Stephenson	. 6,618	1.18	190
Tazewell		1.32	213
Union	. 894	.16	26

# ILLINOIS (Cont'd)

Counties	No. 4 otal Furnaces Installed	No. 5 % of State Total	No.6 Allotment of State Quota (No. Furnaces)
Vermilion	7,708	1.38	223
Wabash		.11	18
Warren	0 505	.49	79
Washington	* 10	.10	16
Wayne		.07	11
White		.10	16
Whiteside		1.03	166
Will		2.35	379
Williamson	4 050	.24	39
Winnebago	00.000	3.94	636
Woodford	4 0 -4	.34	* 55

# SOUTH DAKOTA

No. I		41,436
No. 2	% of National Total	.60%
No. 3	Allotment of 200,000 Quota	1,200

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Aurora	273	.66	. 8
Beadle		4.49	54
Bennett		.08	1
Bon Home		1.35	16
Brookings		3.04	37
Brown		7.01	84 .
Brule		.69	8
Buffalo		.06	9
Butte		.43	5
Charles Mix		1.16	14
Clark		1.11	13
Clay	850	2.05	25
Codington		3.89	47
Corson		.57	7
Custer		.32	4 51
Day		4.26 1.22	15
Deuel		.60	7
Dewey		.54	6
Douglas		.68	8
Edmunds		.79	. 9
Fall River	317	.77	9
Faulk		.75	9 .
Grant	503	1.21	15
Gregory		.77	9
Haakon		.30	11
Hand		.90	11
Hanson		.72	9
Harding	138	.33	4
Hughes	613	1.48	18
Hutchinson	748	1.81	22
Hyde		.34	4
Jackson		.13	2
Jerauld		.66	8 2
Jones		1.27	15
Lake		2.16	26
Lawrence		1.58	19
Lincoln	999	2.41	29
Lyman		.30	4
McCook		1.26	15
McPherson		.88	11
Marshall		.85	10
Mellette		.11	1
Miner		.79	9
Minnehaha		21.60	259
Moody	521	1.26	15
Pennington	1,579	3.81	46
Perkins		.98	12
Potter		.43	5
Roberts		1.12	13
Sanborn		.64	2
Spink		2.19	26
Stanley	68	.16	2
Sully	112	.27	. 3
Todd	76	.18	2
Tripp	291	.70	. 8
Turner		1.95	23
Union	690	1.67	20
Walworth Washabaugh		1.11	13
Washington		.03	• •
Yankton		2.21	27
Ziebach	64	.16	2

# OREGON

No. I	Total Furnaces In	stalled	91,467
No. 2	% of National	Total	1.32%
No. 3	Allotment of 200	,000 Quota	2,640

Counties	No. 4 otal Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Baker	. 572	.63	17
Benton	4.084	1.50	40
Clackamas		4.01	106
Clatsop		1.57	41
Columbia		.62	16
Coos		.80	21
Crook		.08	2
Curry		.02	1
Deschutes		.75	20
Douglas		.55	15
Gilliam		.08	2
Grant		.06	2
		.16	4
Harney		.73	19
Hood River	000	.75	20
		.03	1
Jefferson			6
Josephine		.24	30
Klamath		1.13	
Lake		.09	2
Lane		3.17	84
Lincoln		.23 •	6
Linn		1.06	28
Malheur		.42	11
Marion	. 5,425	5.93	157
Morrow	. 82	.09	2
Multnomah	. 62,875	68.74	1,815
Polk		.58	15
Sherman	. 111	.12	3
Tillamook		.22	. 6
Umatilla	. 979	1.07	28
Union		.75	20 .
Wallowa		.10	3
Wasco		.86	. 23
Washington		2.00	52
Wheeler		.01	0.2
Yamhill		.85	22

# INDIANA

No. I	Total Furnaces Installed	339,499
No. 2	% of National Total	4.91%
No. 3	Allotment of 200,000 Quota	9,820

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotmen of State Quot (No. Furnaces
Adams		.48	47
Allen		8.26	811
Bartholomew		.69	68
Benton		.20	20
Blackford		.16	16
Boone		.46	45
Brown		.01	1
Carroll	939	.28	27
Cass	3.305	.97	95
Clark	1.498	.44	43
Clay	1.293	.38	37
Clinton	2,365	.70	69
Crawford	116	.03	3
Daviess	1,403	.41	40
Dearborn		.45	44
Decatur		.16	16
DeKalb		.92	90
Delaware		2.21	217
Dubois		.43	42
Elkhart		3.75	368
Fayette		.57	56 '
Floyd		.79	78
	1.121	.33	32
Franklin		.11	11
Fulton		.35	34
Gibson		.53	52
Grant		1.04	102
Greene		.34	33
Hamilton		.51	50
Hancock		.34	33
Harrison		.07	7
Hendricks		.44	43
Henry		.98	96
Howard		1.43	140
Huntington		.77	76
Jackson		.46	45
Jasper		.22	22
Jay		.22	22
Jefferson		.17	17
Tennings	910	.11	11

# INDIANA (Cont'd)

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Johnson	1,758	.52	51
Knox	3,449	1.01	99
Kosciusko	2.723	.80	79
LaGrange	1.285	.38	37
Lake		8.16	801
LaPorte		2.48	243
Lawrence	1.772	.52	51
Madison	9.354	2.76	271
Marion		19.88	1,952
Marshall		.67	66
Martin		.06	6
Miami		.76	75
Monroe		.85	83
Montgomery		.82	81
		.31	30
Morgan			12
Newton		.12	
Noble		.74	73
Ohlo		.04	4
Orange		.16	16
Owen		.13	13
Parke		.21	21
Perry	560	.16	16
Pike	531	.16	16
Porter	3,340	.98	96
Posey	633	.19	19
Pulaski	471	.14	14
Putnam		.45	44
Randolph		.43	42
Ripley		.17	17
Rush		.28	27
St. Joseph		8.32	817
Scott		.05	5
Shelby		.67	66
Spencer		.09	9
Starke		.18	18
Steuben		.43	42
			23
Sullivan		.24	
Switzerland		.04	4
Tippecanoe		1.90	187
Tipton		.19	19
Union		.11	11
Vanderburgh		3.94	387
Vermillion		.36	35
Vigo	12,794	3.77	370
Wabash	2,371	.70	69
Warren	308	.09	9
Warrick		.25	25
Washington		.10	10
Wayne		2.13	209
Wells		. 30	29
White		.24	24
Whitley		.41	40

# WYOMING

No. 1	Total Furnaces Installed	11,825
No. 2	% of National Total	.17%
No. 3	Allotment of 200,000 Quota	340

T Counties	No. 4 otal Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Albany	. 952	8.05	27
Big Horn	. 331	2.80	9
Campbell		2.67	9
Carbon	401	3.39	11
Converse	. 226	1.91	6
Crook		.56	2
Fremont	368	3.11	11
Goshen		3.44	12
Hot Springs		1.16	4
Johnson		2.53	9
Laramie		25.59	87
Lincoln		1.23	4
Natrona		15.49	53
Niobrara		1.34	5
Park		3.42	12
Platte		2.32	8
Sheridan		11.04	. 38
Sublette		.36	1
Sweetwater	421	3.56	12
Teton		.50	2
Uinta		2.78	9
Washakie		1.84	6
Weston		.89	3
Yellow Stone Nationa			
Park (Part)		.02	

# NEBRASKA

No. I	Total Furnaces Installed	125,465
No. 2	% of National Total	1.81%
No. 3	Allotment of 200,000 Quota	3,620

No. 3	Allotment	of 200,000 (	Puota	3,620
Coun		No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotmen of State Quot (No. Furnaces
	*********	2,616	2.08	75
Antelop	e		.60	22
	*********		***	*:
Banner	**********		.02	1
	*********		.01	20
Boone	tte		.68	25
	***********		.18	7
			.20	7
	*******		1.50	54
Burt		829	.66	24
			.55	20
			1.01	37 25
			.69	6
			.20	7
	ne		.53	19
			.54	19
	*********		.45	16
			.67	24
			.83	30 23
	**********		.63	19
	************		.64	23
		***	.19	7
Dixon .	**********	798	.64	23
Dodge		3,027	2.41	87
Douglas			34.36	1,244
	**********		.12	4
	n		.28	17 10
	r		.19	7
			.43	16
			2.05	74
Garden	*********		.12	4
	*********		.11	4
Josper	********		.10	1
	***********		.04	9
			2.77	100
	on		.60	22
Harlan	*********	365	.29	10
			.05	2
Hitchco			.28	10
			.45	16
Hooker Howard	************		.04	1 13
	n		1.09	39
Johnson			.27	10
	y	482	.38	14
	**********		.32	12
	aha		.02	1 9
			.66	24
	er		13.64	494
			1.38	50
Logan			.03	1
	*********		.02	1
McPher Madison	son		.01	**
dadisor derrick		2,983	2.38	86
	***********		.54	19
	************		.33	12
Nemaha		573	.46	17
	8		.49	18
	* * * * * * * * * * * * * * * * * * * *		1.15	42
	*********		.32	12
	***********		.19 .50	18
			.43	16
	************		1.29	47
Polk		723	.58	21
Red Wi	llow	1,047	.83	30
	son		1.10	40
	*********		.05	2 20
	• • • • • • • • • • • • • • •		.89	32 30
	ß		1.18	43
	Bluff		1.59	58
Seward	**********		.85	31
Sherida	n	517	.41	15
	n		.26	9
			.06	2
Stanton			.36	13
	*********		.54	20
	n		.04	9
	n		.33	12
	gton		.73	26
	Bron		.71	26
Webster	r	464	.37	13
			.02	1
TOLK		1,436	1.14	41

# KENTUCKY

No. I	Total Furnaces Installed	82,215
	% of National Total	1.19%
No. 3	Allotment of 200,000 Quota	2,380

	No. 4 tal Furnaces Installed	% of State Total	No. 6 Allotment of State Quote (No. Furnaces)
Adair	81	.10	2
Allen	32	.04	1 3
Anderson	88 19	.02	
Barren	268	.33	9
Bath	53	.06	1
Bell	436	.53	13
Boone	420	.51	12
Bourbon	356	.43 1.12	10 27
Boyle	923 903	1.10	26
Bracken	163	.20	5
Breathitt	33	.04	1
Breckinridge	95	.12	3
Bullitt	68	.08	2
Butler	12 293	.01	9
Caldwell	219	.27	6
Campbell	9,771	11.88	283
Carlisle	16	.02	**
Carroll	194	.24	6
Carter	50	.06	1
Casey	27 810	.03	24
Christian	307	.37	9
Clay	2		
Clinton	13	.02	••
Crittenden	81	.10	2
Cumberland	12	.01	
Daviess Edmanson	2,029 19	.02	59
Elliott	13	.02	
Estill	123	.15	4
Fayette	4,760	5.79	138
Fleming	109	.13	3
Floyd	17	.02	10
Franklin	531 305	.65	16
Fulton	63	.08	2
Garrard	147	.18	4
Grant	138	.17	4
Graves	238	.29	7
Grayson	65	.08	2
Green	46	.06	1 7
Greenup	257 51	.31	i
Hardin	445	.54	13
Harlan	104	.13	3
Harrison	408	.50	12
Hart	89	.11	3
Henderson	608	.74	18
Henry	76 23	.09	2
Hopkins	347	.42	10
Jackson	5	.01	
Jefferson	33,889	41.22	981
Jessamine	252	.31	7
Johnson	35	.04	1
Kenton	12,657 76	15.40	367
Knott	102	.12	3
Larue	129	.16	4
Laurel	172	.21	Б
Lawrence	13	.02	
Lee	19	.02	**
Leslie	17 24	.02	i
Letcher	11	.03	
Lincoln	132	.16	**
Livingston	25	.03	1
Logan	188	.23	. 5
Lyon	17	.02	11
McCracken	1,196	1.45	. 35
McCreary McLean	20 91	.02	
McLean	560	.68	16
Magoffin	300	.00	
Marion	160	.19	5
Marshall	45	.05	1
Martin	1	***	**
Mason	151	.18	4
Meade	32 2	.04	1
Mercer	250	.30	7
Metcalfe	7	.01	
Monroe	37	.05	i
Montgomery	131	.16	4
Morgan	3	***	
Muhlenberg	218	.27	6 5
Nelson	179		

# KENTUCKY (Cont'd)

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Ohio		.19	5
Oldham	195	.24	6
Owen	89	.11	3
Owsley	29	.04	1
Pendleton	214	.26	6
Perry	223	27	6
Pike	39	.05	1
Powell	3		
Pulaski	400	.49	12
Robertson	26	.03	1
Rockcastle	26	.03	1
Rowan	153	.19	5
Russell	2		
Scott		.47	11
Shelby		.59	14
Simpson		.11	3
Spencer		.04	1
Taylor		.10	2
Todd		.08	2
Trigg		.10	. 2
Trimble		.03.	1
Union		.20	. 5
Warren		1.21	29
Washington		.12	3
Wayne		.06	1
Webster		.15	4
Whitley		.10	2
Wolfe		.01	
Woodford		.24	6

# NORTH DAKOTA

No. I	Total Furnaces Installed	37,792
No. 2	% of National Total	.55%
No. 3	Allotment of 200,000 Quota	1,100

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Adams	379	1.00	11 %
Barnes	990	2.62	29
Benson	500	1.32	15
Billings	51	.14	2
Bottineau	585	1.55	17 :
Bowman		.80	9
Burke		1.42	16
Burleigh		6.01	66
Cass		13.07	144
Cavalier	479	1.27	14
Dickey		1.25	14
Divide		1.12	12
Dunn		.80	9
Eddy		.77	9
Emmons		.93	10
Foster		.76	8
Golden Valley		.53	6
Grand Forks .		7.59	83
Grant		.96	11
Griggs		.84	. 9
Hettinger		1.44	16
		.74	8
Kidder		1.03	11
La Moure		.86	9
Logan			
	703	1.86	20
McIntosh		1.40	15
McKenzie		1.01	11
McLean		2.20	24
Mercer		1.12	12
Morton		2.76	30
Mountrail		1.71	19
Nelson		.99	11
Oliver		43	5
Pembina	624	1.65	18
Pierce		1.07	12
Ramsey		2.43	. 27
Ransom	451	1.19	13
Renville	309	.82	9
Richland		2.34	26
Rolette	322	.85	9
Sargent		.84	9
Sheridan		.67	7
Sioux		.29	3
Slope		.43	5
Stark		2.00	22
Steele		.58	6
Stutsman		4.48	49
Towner		.97	. 11
		1.37	15
Traill		1.96	22
Walsh			91
Ward		8.28	19
Wells		1.71	
Williams	1.423	3.77	42

# MINNESOTA

No. I	Total Furnaces Installed	198,722
No. 2	% of National Total	2.87%
No. 3	Allotment of 200,000 Quota	5,740

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotmen of State Quote (No. Furnaces
Aitkin		.30	17
Anoka		.98	56
Becker		.44	25
Beltrami		.43	24 27
Benton		.25	14
Blue Earth		1.88	108
Brown		1.00	57
Carlton		.73	42
Carver		.61	35
Cass	552	.28	16
Chippewa		.59	34
Chisago		.32	18
Clay		.91	52
Clearwater		.11	6 2
Cook		.03	32
Crow Wing		.76	44
Dakota		1.75	100
Dodge		.42	24
Douglas		.54	31
Faribault		.93	53
Fillmore	1,717	.86	49
Freeborn		1.57	90
Goodhue		1.27	73
Grant		.28	16
Hennepin		26.09	1,498
Houston Hubbard		.49	28
		.15	12
Isanti		.77	44
Jackson		.57	33
Kanabec		.20	12
Kandiyohi		.72	41
Kittson		.17	10
Koochiching		.19	11
Lac Qui Parle		.38 *	22
Lake		.18	10
Lake of the Wood	ls 149	.07	4
Le Sueur		.74	43
Lincoln		.27	16
Lyon		.71	41
McLeod		.77	44
Mahnomen		.11 .25	6
Marshall		1.24	14 71
Meeker		.48	28
Mille Lacs		.35	20
Morrison		.49	28
Mower		2.10	121
Murray		.36	21
Nicollet		.85	49
Nobles		.61	35
Norman	532	.27	16
Olmsted	4,785	2.41	138
Otter Tail	2,492	1.25	72
Pennington	722 .	.36	21
Pine	858	.43	25
Pipestone		.44	25
Polk		1.07	62
Pope		.38	22
Ramsey		12.08	693
Red Lake		.08	5
Redwood		.78	45
Renville	- Acres	.73	42
Rice		1.51	87
Rock	000	.30	17
Roseau		.22	13
St. Louis		7,76	445
Scott		.41	24
		.23	13
Sherburne		.52	30
Sibley			122
Stearns		2.13	51
Steele		.89	
Stevens		.32	18
Swift		.35	20
Todd		.57	33
Traverse		.18	10
Wabasha		.54	31
Wadena	537	.27	15
Waseca	1,341	.67	39
Washington		1.09	63
Watonwan		.48	28
Wilken		.23	13
		1.97	113
Winona			
Wright	4 444	.79	45

# IOWA

No. I	Total Furnaces In	nstalled	 	27	79,531
No. 2	% of National	Total	 		4.04%
No. 3	Allotment of 200	.000 Quota	 		8,080

Counties		No. 4 otal Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
		784	.28	23
Adams		601	.23	. 19
		1,451 1,482	.52 .53	42 43
		944	.34	27
		2,151	.77	62
	vk	14,160	5.07	410 90
		3.131 1.839	1.12	53
Buchanan		1,333	.48	39
	ta	1.956	.70	57 33
		1,136 1,675	.60	48
Carroll		1.848	.66	53
		1,659	.59	48 57
	io	1,961 6,265	.70 2.24	181
Cherokee		1,603	.57	46
		1,121	.40	32
		558 1,782	.20 .64	16 52
Clayton		1,780	.64	52
		6.626	2.37	191
		1,679 2,401	.60	48
Davis		517	.18	15
		635	.23	19
	s	1,352 5,613	.48 2.01	39 162
		919	.33	27
		5,890	2.11	170
		1,329 3,160	.48 1.13	39 91
		2,195	.78	63
Franklin .		1,675	.60	49
		760 1.700	.27	22
		1,525	.55	44
Guthrie		1.317	.47	38
		1,724 1,255	.62 .45	50 36
		1.941	.69	56
Harrison .		1,412	.50	40
		1,451 815	.52	42
		947	.34	28
Ida		812	.29	23
		1,494 1,563	.53	48 45
		3,656	1.31	106
Jefferson		1,428	51	41
		1.802	1.60	129 52
		1.343	.48	39
		2,201	.79	64
		3,914 15,175	1.40 5.43	113 439
		793	.28	23
		968	.35	28
Lyon		967 878	.35	28 25
	***********	2.584	.92	74
		1,908	.68	55
		5,011 904	1.79 .32	145 26
		1.058	.38	31
		1,151	.41	33
	y	783 1,652	.28	23 48
		4,115	1.47	119
O'Brien		1,607	.57	46
		2.089	.22 .75	18 61
	**********	986	.35	28
Plymouth		2,280	.82	66
	9	1,232	.44	36
	mie	33,625 9.035	12.03 3.23	972 261
Poweshiek	*********	2,246	.80	65
	• • • • • • • • • • • • •	463	.17	14
		1,605 14.020	.58 5.01	47 405
Shelby		1,371	.49	40
Sioux		2,026	.72	58
		4.211 2,251	1.51	122 65
		699	.81	20
Taylor				
		1.541	.55	45
Union Van Burer	1	590	.21	17
Union Van Burer Wapello .				

# IOWA (Cont'd)

Counties	No. 4 No. 5 Total Furnaces % of State Installed Total		No. 6 Allotment of State Quota (No. Furnaces)	
Wayne	700	.25	20	
Webster		2.05	166	
Winnebago	. 972	.35	28	
Winneshiek		.62	50	
Woodbury	. 16.178	5.79	468	
Worth		.31	25	
Wright		.71	57	

# WISCONSIN

No. I	Total Furnaces Installed	332,357
	% of National Total	
	Allotment of 200,000 Quota	

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Adams	299	.09	9
Ashland		.31	30
Barron		.54	52
Bayfield		.16	15
Brown		2.75	264
Buffalo		.27	26
Burnett		.09	9
Calumet		.55	53
Chippewa		.69	66
Clark		.74	71
Columbia		.90	86
Crawford		.21	20
Dane		4.80	461
Dodge		1.76	169
Door		.36	35
		.86	83
		.49	47
Dunn		1.24	119
Eau Claire			
Florence		.05	5
Fond du Lac		2.84	273
Forest		.10	10
Grant		1.19	114
Green	2,628	.79	76
Green Lake	1,159	.35	34
Iowa		.38	37
Iron	502	.15	14
Jackson	603	.18	17
Jefferson	4,817	1.45	139
Juneau	844	.25	24
Kenosha		3.03	291
Kewaunee		.32	31
La Crosse		1.83	176
LaFayette		.40	38
Langlade		.63	60
Lincoln		.48	46
Manitowoc		2.04	196
Marathon		2.22	213
Marinette	2,714	.82	79
Marquette		.10	10
Milwaukee		31.10	2,986
		.69	66
Monroe		.35	34
Oconto			
Oneida		.45	43
Outagamie		2.98	286
Ozaukee		.56	54
Pepin		.15	14
Pierce		.46	44
Polk		.42	40
Portage		.69	66
Price	573	.17	16
Racine		4.26	409
Richland	1.245	.38	36
Rock	12,219	3.68	353
Rusk	856	.26	25
St. Croix	1,627	.49	47
Sauk	3,655	1.10	106
Sawyer		.10	10
Shawano		.67	64
			283
Sheboygan		2.95	
Taylor		.23	22
Trempealeau	1,373	.41	39
Vernon	1,474	.44	42
Vilas		.13	12
Walworth		1.28	123
Washburn		.19	18
Washington		.77	74
Waukesha		2.43	233
Waupaca	2,814	.85	82
Waushara		.19	18
Winnebago		3.44	330
Wood	4,395	1.32	127

M	 -	-	9 5	-	

No. I	Total Furnaces Installed	266,677
No. 2	% of National Total	3.85%
	Allotment of 200,000 Quota	7,700

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Adair	1,034	.89	. 30
Andrew		.20	15
Atchison		.24	18
Audrain		.35	27 8
Barry		.06	5
Barton Bates		.17	13
Benton		.06	5
Bollinger		.01	1
Boone		1.06	82
Buchanan		3.95	304
Butler	538	.20	15
Caldwell		.17	13
Callaway	762	.29	22
Camden		.03	72
Carroll		.33	25
Carter		.01	1
Cass		.26	20
Cedar	104	.04	3
Chariton		.18	14
Christian		.03	2
Clark		.09	7
Clay		1.10	85 21
		1.21	93
Cole		.24	18
Crawford		.04	3
Dade		.01	1
Dallas	39	.01	1
Daviess	255	.10	. 8
DeKalb		.09	7
Dent		.05	4
Douglas		.03	2
Dunklin		.05	49
Franklin		.17	13
Gentry		.14	11
Greene		2.43	187
Grundy	916	.34	26
Harrison	480	.18	14
Henry	995	.37	28
Hickory	20 502	.01	15
Howard		.19	18
Howell		.11	8
Iron		***	
Jackson	68 560	25.70	1,978
Jasper	2,466	92	71
Jefferson		.65	50
Johnson Knox		.41	32
Laclede		.05	8
Lafayette		.61	47
Lawrence		.16	12
Lewis		.11	. 8
Lincoln		.10	8
Linn		.44	34
Livingston	- 00	.38	29
McDonald		.03	2
Macon		.27	21
Maries		.02	5 2
Marion		.95	73
Mercer		.07	5
Miller		.10	8
Mississippi	93	.03	2
Moniteau	290	.11	8
Monroe		.12	. 9
Montgomery		.08	6
Morgan		.04	3
New Madrid		.04	3
Newton		.18	14
Nodaway Oregon		.56	43
Osage		.06	5
Ozark		.00	
Pemiscot		.02	2
Perry	529	.20	15.
Pettis		.81	62
Phelps		.17	13
Pike		.20	15
Platte		.23	18
Polk		.05	4
Pulaski		.04	3
Putnam		.09	7 5
Ralls			9
Ralls			
Randolph	1,822	.68	52
	1,822		

# MISSOURI (Cont'd)

Counties	No. 4 otal Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
St. Charles	. 1,400	.52	40
St. Clair	. 131	.05	4
St. Francois	. 848	.32	25
St. Louis County	. 37,150	13.93	1,073
St. Louis City		30.67	2,361
Ste. Genevieve		.15	12
Saline	. 1,831	.69	53
Schuyler	. 148	.06	5
Scotland		.11	8
Scott		.22	17
Shannon	. 17	.01	1
Shelby	. 283	.11	8
Stoddard		.06	5
Stone		.02	2
Sullivan		.07	5 2
Taney		.02	2
Texas		02	2
Vernon		.24	18
Warren		.10	8
Washington		.05	4
Wayne		.01	1
Webster		.05	4
Worth	. 109	.04	3
Wright	. 148	.06	5

# MONTANA

No. I	Total Furnaces Installed	30,485
No. 2	% of National Quota	.44%
No. 3	Allotment of 200,000 Quota	880

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Beavershead	151	.50	4
Big Horn		.82	7
Blaine		1.30	11
Broadwater		.26	. 2
Carbon		1.02	. 9
Carter		.13	1
Cascade		14.71	129
		.85	7
Chouteau		3,20	28
Custer		1.08	10
Daniels			17
Dawson		1.94	
Deer Lodge	792	2.60	23
Fallon	128	.42	4
Fergus	652	2.14	19
Flathead	1,457	4.78	42*
Gallatin	1,349	4.42	39
Garfield	89	.29	3
Glacier		.65	6
Golden Valley		.19	2
Granite		25	2
		3.07	27
Hill		.21	2
Jefferson		.56	
Judith Basin			7
Lake	229	.75	29
Lewis & Clark		4.41	
Liberty		.19	2
Lincoln	210	.69	6
McCone	137	.45	4
Madison	48	.16	1
Meagher	34	.11	1
Mineral		.09	1
Missouia		6.47	57
Musselshell		1.05	9
Park		2.07	18
Petroleum		.07	1
		1.00	9
Phillips		.86	8
Pondera		.20	2
Powder River			7
Powell		.77	
Prairie		.35	3
Ravalli		.82	7
Richland	675	2.21	19
Roosevelt	520	1.71	15
Rosebud		.78	7
Sanders		.45	4
Sheridan		1.70 °	15
Silver Bow		9.15	80
Stillwater		.42	4
Sweet Grass		.24	2
Teton		.81	7
		.80	7
Toole			i
Treasure		.08	26
Valley		2.99	6
Wheatland		.66	
Wibaux		.26	2
Yellowstone	3,608	11.84	104
Yellowstone Nation	nal		



# Heat Controls for Fuel Conservation

Some part of the program for fuel conservation by means of more production of heat controls will be carried out. Probably most of it. The WPB Program Adjustment Committee at its meeting on November 6th accepted the proposal to allocate 1,000 tons carbon steel for the fourth quarter of the year to manufacture barometric dampers. This is the only part of the program accepted for the fourth quarter.

But if developments unfold as they usually do in the Government it is quite certain more materials, including copper, aluminum, plastics and other materials, will be allocated for the first quarter of the next year. How much copper will be allocated for the production of barometric dampers during the fourth quarter had not been determined when this was writ-

ten. Some copper will be provided.

The off record impression is that practically the whole program as submitted to the Committee will be in operation by Spring. The principle which will govern will rest upon the abundance of materials, manpower, simplicity of the item to be manufactured, and availability of manufacturing facilities. Smaller plants, with more versatility and flexibility and less rigid Army and Navy control, are expected to have most opportunities to do this job. The larger plants, highly geared to certain war production, are vigilantly kept to the war grindstone by Army, Navy, and Maritime inspectors.

#### **Program Recommended by OCR**

The program originally approved by Vice Chairman A. D. Whiteside, of OCR, involves roughly 700,000 items of various kinds of thermostats, dampers, motors, limit controls, and parts involved in the installation of this equipment. In addition, the program includes 2,000,000 specialties, such as valves, traps, etc., and numerous items used in the operation of furnaces, steam heating plants, oil-fuel burners, gas fuel plants, in effect practically everything to conserve all kinds of fuel. At least 1,000,000 valves and similar items were included. The program envisions some 100,000 electric damper sets; 100,000 limit controls; 200,000 barometric controls for central heating systems; 32,000 sets of controls for commercial installations.

## **Materials Not Yet Approved**

The discussion concerning this method of conserving fuel has been going on for months. Recently it came to a head and the plan was submitted to Mr. Whiteside. He approved the plan to present an application or claim for materials to the Program Adjustment Committee. It disturbed him when word fil-

tered back from various parts of the country that it was understood he had approved a plan for specific quantities of materials which apparently were assumed by some elements in this industry to be practically ready for use. Mr. Whiteside immediately made it clear that he had only approved a program to support an application for critical materials, and that his approval did not mean the materials were available, or could be made available by his action. It is the function of the Program Adjustment Committee to determine the availability of critical materials, the availability of manufacturing facilities, and, in effect, to determine if the supply of manpower and facilities is sufficient to warrant the allocation of critical materials. The incident is a clear illustration of Mr. Whiteside's concept of the relation of the functions of his agency to those of others. OCR acted as the catalyst. It studied, and crystallized the thought on the subject, approved the principle of the plan and recommended it to the Program Adjustment Committee for consideration of the allocation of the materials required.

If the plan finally is supported in its entirety by allocations it means at least 300,000 dampers of various kinds will be authorized; and that a like number of thermostats (in various categories) and motors and limit controls may be made of critical materials which primarily involve steel, copper, aluminum, plastics, lead, zinc, and some platinum. Materials also will be provided for 100,000 items required to finish the installations. The general thought here is that the chief obstacle to the plan, if any occurs, will be manpower rather than materials. Manpower is regarded as part of the problem of plant facilities.

#### **Controls Require Skilled Help**

It is pointed out that motors, including fractional horsepower motors, as well as pneumatic motors, and similar equipment, are complicated mechanisms which require precision work and much skilled workmanship; and by their very nature will place a restriction on the volume of their production because the activity creates the need of men and facilities urgently required in production of critical war material. The simplest heat control item, that reduces fuel consumption, which can be manufactured in the greatest quantity with the least skilled labor and produced in the greatest number in the least time, is the item that will be given the right-of-way.

It is generally assumed the problem of manufacturing facilities is not difficult. Apparently the field has been surveyed, and it seems to be the conclusion

(Continued on page 88)

# On Our Industry's Front

# **Congress to List Civilian Needs**

Before submitting a program for production of needed civilian goods of types that are scarce or non-existent, WPB will measure each requirement in the light of its contribution to the war effort. The need must pass a severe test that will eliminate many items highly desired, but not considered indispensable.

Director of Civilian Requirements Whiteside is seeking from Congress information about the troubles of their constituents facing increasing difficulties in procuring things they regard as necessary to maintain minimum living standards.

# **Furnaces for 1944**

NCE the production of warm air furnaces for essential civilian replacement purposes is likely to be considered necessary in 1944, the following letter is of interest to producers:

c-et-r-oe-s-se

"A number of essential civilian products must be produced in the next year in order to provide the civilian population with items necessary to health, safety, and general welfare. About 700 items are being programmed for production in 1944. It is contemplated that these items must be manufactured in part by small manufacturers with open capacity which have manufactured these items in the past.

"It is possible that the district office of the Smaller

War Plants Corporation has already communicated with you concerning your possible participation in this program. If it has not, this letter is of vital importance to you. If you are a manufacturer of civilian items which you believe may be included among the essential civilian items referred to above, contact your nearest SWPC office after making a definite appointment.

"We anticipate that a large number of manufacturers will take immediate advantage of the above information and as certain essential steps must be taken to qualify for participation in this program, it is necessary that you act promptly if you wish to participate.—Albert M. Carter, Acting Chairman."

# **Accommodation Sales Prices**

SPECIAL provision for regulating accommodation sales of industrial materials has been made by the Office of Price Administration to simplify and expedite accommodation sales made in connection with the war program. One condition is that such sales must be made without profit.

In many cases one or another Government agency has requested a contractor who happened to be long on inventory of a needed material to transfer a portion of that inventory to another contractor who was short of it. To avert critical shortages in other cases, contractors have pooled or exchanged materials voluntarily.

# What OCR Is Doing For the Furnace Situation

In the October report on what Washington agencies are doing about the furnace situation, Office of Price Administration reported certain problems and procedures whereby changes in the price structure can be obtained.

Supplementing that October report, OPA suggests that the following additional information may be helpful:

1—The data needed to prove a case bearing on a request for price increase have all been announced by OPA and OPA requests that these data be supplied direct to Washington instead of to our industry's advisory committee as suggested in the October report.

2—OPA's approval on furnace prices when a manufacturer resumes production need not be obtained if—"the existing maximum price based on prices charged in March, 1942, is used or changes are made in the product."

3—The nine per cent price increase granted cast iron furnace manufacturers August 3 was "to take care of the emergency pending a complete study to determine what additional increase, if any, could be granted". No decision has yet been announced.

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7—Procedure exists for OPA to act on an individual price increase on groups or individual sizes or types of products sold on contracts or sub-contracts with certain government agencies.

8—OPA is endeavoring to correct inequities in maximum prices by actions applicable to entire industries. However, where it is demonstrated that adjustments for individual companies on non-governmental business is necessary or better than on an over-all industry basis, such provision can be made by amendment to the applicable regulation on its own motion or upon petition from the industry affected.



# Heat Controls for Fuel Conservation

Some part of the program for fuel conservation by means of more production of heat controls will be carried out. Probably most of it. The WPB Program Adjustment Committee at its meeting on November 6th accepted the proposal to allocate 1,000 tons carbon steel for the fourth quarter of the year to manufacture barometric dampers. This is the only part of the program accepted for the fourth quarter.

But if developments unfold as they usually do in the Government it is quite certain more materials, including copper, aluminum, plastics and other materials, will be allocated for the first quarter of the next year. How much copper will be allocated for the production of barometric dampers during the fourth quarter had not been determined when this was writ-

ten. Some copper will be provided.

The off record impression is that practically the whole program as submitted to the Committee will be in operation by Spring. The principle which will govern will rest upon the abundance of materials, manpower, simplicity of the item to be manufactured, and availability of manufacturing facilities. Smaller plants, with more versatility and flexibility and less rigid Army and Navy control, are expected to have most opportunities to do this job. The larger plants, highly geared to certain war production, are vigilantly kept to the war grindstone by Army, Navy, and Maritime inspectors.

#### **Program Recommended by OCR**

The program originally approved by Vice Chairman A. D. Whiteside, of OCR, involves roughly 700,000 items of various kinds of thermostats, dampers, motors, limit controls, and parts involved in the installation of this equipment. In addition, the program includes 2,000,000 specialties, such as valves, traps, etc., and numerous items used in the operation of furnaces, steam heating plants, oil-fuel burners, gas fuel plants, in effect practically everything to conserve all kinds of fuel. At least 1,000,000 valves and similar items were included. The program envisions some 100,000 electric damper sets; 100,000 limit controls; 200,000 barometric controls for central heating systems; 32,000 sets of controls for commercial installations.

#### **Materials Not Yet Approved**

The discussion concerning this method of conserving fuel has been going on for months. Recently it came to a head and the plan was submitted to Mr. Whiteside. He approved the plan to present an application or claim for materials to the Program Adjustment Committee. It disturbed him when word fil-

tered back from various parts of the country that it was understood he had approved a plan for specific quantities of materials which apparently were assumed by some elements in this industry to be practically ready for use. Mr. Whiteside immediately made it clear that he had only approved a program to support an application for critical materials, and that his approval did not mean the materials were available, or could be made available by his action. It is the func-tion of the Program Adjustment Committee to determine the availability of critical materials, the availability of manufacturing facilities, and, in effect, to determine if the supply of manpower and facilities is sufficient to warrant the allocation of critical materials. The incident is a clear illustration of Mr. Whiteside's concept of the relation of the functions of his agency to those of others. OCR acted as the catalyst. It studied, and crystallized the thought on the subject, approved the principle of the plan and recommended it to the Program Adjustment Committee for consideration of the allocation of the mate-

If the plan finally is supported in its entirety by allocations it means at least 300,000 dampers of various kinds will be authorized; and that a like number of thermostats (in various categories) and motors and limit controls may be made of critical materials which primarily involve steel, copper, aluminum, plastics, lead, zinc, and some platinum. Materials also will be provided for 100,000 items required to finish the installations. The general thought here is that the chief obstacle to the plan, if any occurs, will be manpower rather than materials. Manpower is regarded as part of the problem of plant facilities.

#### **Controls Require Skilled Help**

It is pointed out that motors, including fractional horsepower motors, as well as pneumatic motors, and similar equipment, are complicated mechanisms which require precision work and much skilled workmanship; and by their very nature will place a restriction on the volume of their production because the activity creates the need of men and facilities urgently required in production of critical war material. The simplest heat control item, that reduces fuel consumption, which can be manufactured in the greatest quantity with the least skilled labor and produced in the greatest number in the least time, is the item that will be given the right-of-way.

It is generally assumed the problem of manufacturing facilities is not difficult. Apparently the field has been surveyed, and it seems to be the conclusion

(Continued on page 88)

# On Our Industry's Front

# **Congress to List Civilian Needs**

Before submitting a program for production of needed civilian goods of types that are scarce or non-existent, WPB will measure each requirement in the light of its contribution to the war effort. The need must pass a severe test that will eliminate many items highly desired, but not considered indispensable.

Director of Civilian Requirements Whiteside is seeking from Congress information about the troubles of their constituents facing increasing difficulties in procuring things they regard as necessary to maintain minimum living standards.

# **Furnaces for 1944**

SINCE the production of warm air furnaces for essential civilian replacement purposes is likely to be considered necessary in 1944, the following letter is of interest to producers:

"A number of essential civilian products must be produced in the next year in order to provide the civilian population with items necessary to health, safety, and general welfare. About 700 items are being programmed for production in 1944. It is contemplated that these items must be manufactured in part by small manufacturers with open capacity which have manufactured these items in the past.

"It is possible that the district office of the Smaller

War Plants Corporation has already communicated with you concerning your possible participation in this program. If it has not, this letter is of vital importance to you. If you are a manufacturer of civilian items which you believe may be included among the essential civilian items referred to above, contact your nearest SWPC office after making a definite appointment.

"We anticipate that a large number of manufacturers will take immediate advantage of the above information and as certain essential steps must be taken to qualify for participation in this program, it is necessary that you act promptly if you wish to participate.—Albert M. Carter, Acting Chairman."

# **Accommodation Sales Prices**

SPECIAL provision for regulating accommodation sales of industrial materials has been made by the Office of Price Administration to simplify and expedite accommodation sales made in connection with the war program. One condition is that such sales must be made without profit.

In many cases one or another Government agency has requested a contractor who happened to be long on inventory of a needed material to transfer a portion of that inventory to another contractor who was short of it. To avert critical shortages in other cases, contractors have pooled or exchanged materials voluntarily.

# What OCR Is Doing For the Furnace Situation

In the October report on what Washington agencies are doing about the furnace situation, Office of Price Administration reported certain problems and procedures whereby changes in the price structure can be obtained.

Supplementing that October report, OPA suggests that the following additional information may be helpful:

1—The data needed to prove a case bearing on a request for price increase have all been announced by OPA and OPA requests that these data be supplied direct to Washington instead of to our industry's advisory committee as suggested in the October report.

2—OPA's approval on furnace prices when a manufacturer resumes production need not be obtained if—"the existing maximum price based on prices charged in March, 1942, is used or changes are made in the product."

3—The nine per cent price increase granted cast iron furnace manufacturers August 3 was "to take care of the emergency pending a complete study to determine what additional increase, if any, could be granted". No decision has yet been announced.

4—OPA reports that certain additional producers have now started to make furnaces. Among these are —Fox Division of American Radiator and Standard

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with certain government agencies.

8—OPA is endeavoring to correct inequities in maximum prices by actions applicable to entire industries. However, where it is demonstrated that adjustments for individual companies on non-governmental business is necessary or better than on an over-all industry basis, such provision can be made by amendment to the applicable regulation on its own motion or upon petition from the industry affected.

It has been difficult for sellers to determine under what regulation such transactions should come and what their maximum prices should be. Therefore, Supplementary Order 48, Accommodation Sales of Industrial Materials, is issued effective May 19, 1943, to supersede any other price regulation with regard to such sales. Included among regulations that will no longer control the sales are the General Maximum Price Regulation and Maximum Price Regulation 204, Idle or Frozen Materials sold under Priorities Regulation No. 13. Sales of idle or frozen materials that do not satisfy the conditions established by Supplementary Order 48 are still covered by Maximum Price Regulation 204, the General Maximum Price Regulation or other applicable regulations.

To be considered accommodation sales, sales of industrial materials shall be made entirely without profit. Other conditions are: the material sold must be of a kind and form not normally sold by the seller in the ordinary course of his business and he must have acquired or produced the material for use and not for the purpose of sale by him in substantially the form in which he acquired or produced it. Furthermore, the material must be sold out of stocks that constitute no more than a minimum practicable inventory so that, except for the sale, the seller would in due course have used the material in his own authorized

or scheduled operations.

It is stipulated that the buyer must furnish the seller at or before delivery of the material with a written certificate stating that he has been unable to acquire the material from his regular sources of supply within the time necessary to meet his requirements.

# "Schoolroom" Heaters Not Rationed

THE so-called "schoolroom" heater which is defined by OPA as "a specific type of heater designed for use in schoolrooms, barracks, etc., employing a heavy duty, cast iron or steel, commercial or furnace type heating unit enclosed in a casing through which fresh air is circulated and heated for the school room" is not rationed, says OPA, under the stove rationing order.

# Incomplete WPB-547 (PD-IX)

SEVERAL hundred WPB-547 (formerly PD-1X) forms are being returned to applicants each week because of failure to fill out the blanks properly, the War Production Board's Wholesale and Retail Trade Division reports.

The blanks, used by distributors in obtaining priority assistance for replenishment of inventories, should be filled out carefully and all information which is called for should be provided, officials of

the Division said.

Otherwise, no action can be taken on the applications and there will be no alternative but to return

them to the applicants.

One of the major causes for rejection of applications has been the failure to insert at the top of Column C, Section III, of the application the amount of inventory held by the individual distributor six months prior to the date of filing. It was pointed out that the applicant has the option of giving an

inventory figure for any date between 6 months and 18 months prior to the date of filing the WPB-547 application.

Likewise officials said that a large number of applicants fail to fill in Section II of the form properly, calling for sales and inventory figures for their entire business.

The previous PD-IX form became obsolete on August 1 and cannot be used. Any requests for priority assistance received on this form postmarked after August 1, 1943, will be rejected and returned to the applicant.

# Truck Tires

ELIGIBLE truck operators who hold tire rationing certificates but who are unable to locate within their county the proper tires may apply to their nearest Motor Transport District Office of the Office of Defense Transportation for assistance, the ODT announces.

This information will in turn be transmitted daily to the Office of the Rubber Director, who will endeavor to arrange for the proper redistribution of tires so that all the certificates can be honored as quickly as possible after issuance.

# **Money for Small Plants**

MALLER War Plants Corporation, announces a new loan system which will put approved loan funds more conveniently at the disposal of small business concerns engaged in the production of war material or essential civilian requirements.

Under this new plan, which will become effective November 1, the Regional Loan Agents of Smaller War Plants Comporation will enter into repurchase agreements up to 100 per cent with banks on loans of \$25,000 or less where banks agree to close and service the loans. The interest rate shall be 4 per cent on that part of the loan which is carried at the risk of the SWPC with the banks paying 1 per cent per annum as repurchase charge to SWPC.

In effect the newly devised plan will work like this: Regional Loan Agents of SWPC in the fourteen regions throughout the country have the authority to make loans up to \$25,000 without consulting Wash-

ington.

The operator of a small business makes an application for a loan of \$25,000 or less to the SWPC Loan Agent in his district. Meeting the necessary requirements, the applicant is then asked to designate a specific bank in the community from whom he would like to make the loan. The applicant and the SWPC Loan Agent then go together to the Bank, arrange for the loan and SWPC will enter into a repurchase agreement up to 100 per cent.

Regulations governing these loans are to be as follows:

1. All applications where more than 25 per cent will be used to pay any financial institution, lending agency, fixed or other funded debt retirement shall be sent to the Washington office for action by the Board of Directors.

2. The applicant shall absorb all out-of-pocket ex-(Continued on page 99) nd 47

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# RESIDENTIAL AIR CONDITIONING

SECTION



DEVOTED TO HOME AND SMALL COMMERCIAL AIR CONDITIONING

# More Air Per Pound of Steel



# with MORRISON Wirstream BLOWER WHEELS

30-40% less steel ... fabricated on

**Build Your Own Blower Assemblies** 

By using Airstream Blower Wheels and taking advantage of our engineering service you can build your own blower assemblies at a substantial saving. We'll furnish proper scroll design for your requirements and complete detail working drawing. If desired, one of our engineers will call.

• Due to scientific design, streamlined air inlets and elimination of excess metal, MORRISON Airstream Blower Wheels deliver more air per pound of steel.

Our patented hub construction, which eliminates the use of cast iron or screw machine parts, together with our one-piece construction, reduces weight to a minimum.

Yet the wheel is stronger and more rigid, true running and quiet. The one-piece blade group is made from one continuous strip of steel, then spot-welded to the channelshaped end rings. This eliminates chance of loose blades and reduces vibration to a minimum. This patented construction on modern automatic equipment produces savings in steel and labor which are passed on to you.

> The Modern Morrison Way Conserves Vital Steel—Aids Victory

MORRISON PRODUCTS, INC. EAST 168TH & WATERLOO ROAD CLEVELAND, OHIO

# FHA's Official Determination Of Furnace Adequacy

Reproduced by the National Warm Air Heating and Air Conditioning Association

HE following information was mailed to all Federal Housing Administration field offices on May 5th, 1943. It has just now been released.

"Consideration, from the standpoint of the Minimum Construction Requirements of the Federal Housing Administration, requires a determination of the adequacy of a furnace to provide necessary heat economically and safely. If a furnace is well designed and durably built its performance within range of rating will be economical. If it is of the drum or open dome type with little, if any, baffling it will not perform satisfactorily toward the high limit of this range. In fact, some furnaces of this type have been found under test to run red hot in order to develop their ratings. Some are unable to produce their formula rating at all. In attempting to produce the full output such a furance is apt to burn out, is sure to waste fuel, and may endanger the house.

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Such a furnace will, however, heat air and heat it with reasonable economy and safety if not too much coal is burned in it at one time. The rate at which coal is burned can be controlled by limiting the draft to not more than 0.05" water gauge. This can be accomplished by requiring a non-adjustable automatic draft regulator locked at a setting which will permit only this much draft. Firing rates of furnaces of extremely poor design will be cut sharply and as the design is improved, the firing rate will be cut less and less from the 7.5# maximum. In the example cited above, the output of a poorly designed furnace with a maximum code rating of 55,000 would be reduced to less than 40,000. Its range of rating, therefore, would be restricted between 33,000 and 40,000. The well designed furnace with the same ratio of heating surface to grate area and with the same grate area would have a range from 33,000 upward to 60,500. The attached tables have been worked out to determine the range of rating acceptable in Federal Housing Administration properties.

#### **Determining Minimum Rating**

To determine the lowest permissible rating and, therefore, the smallest size house in which a given furnace may be used, multiply the grate area in Table 2 by the factor "A" in Table 1, opposite the ratio of heating surface to grate area. Example: A 20" drum furnace of the Gravity type has a grate diameter of  $17\frac{1}{2}$ " and a grate area of 241 square inches, the ratio of heating surface to grate area (obtained from the manufacturer's catalog or engineering data) is 16 to 1. Factor "A" opposite this ratio is 131. 241 × 131 equals 31,571 B.t.u. This furnace is, therefore, eligible under the Critical List for installation in a house with a dwelling area as small as 31,571 divided by 66 or 480 ft.

To determine the maximum net hourly output ca-

pacity of the furnace and, therefore, its acceptability in Federal Housing Administration properties, multiply the grate area by the factor "B" opposite the ratio of grate to heating surface. Example: Assume the same furnace in the previous example, 241 times 166 equals 40,000 the maximum capacity. A house with a heat loss of 40,000 is the largest in which it can be installed.

For the purpose of determining acceptability in Federal Housing Administration properties the radiator type furnace shall be considered to include only such furnaces which are provided with secondary heating surface constructed separately from the main combustion chamber section and installed so that fire on the grate cannot shine on any part of its surface. The ratio of secondary heating surface in the radiator to grate area shall be not less than five to one. A non-adjustable automatic draft regulator locked at a setting to limit the firing rate at the output necessary to provide for the house heat loss shall be required as a part of the furnace.

TABLE 1
Rating Factors for Radiatorless Furnaces

*Ratio Heating	Gra	vity	oriess	rurna	Fore	ced
Surface to Grate Area	A	—В			A	—В
15 — 1	128	156			185	225
16 - 1	131	166			189	239
17 - 1	134	176			193	254
18 — 1	137	186			198	268
19 — 1	140	196			202	282
20 - 1	143	206			206	297
	Radiator	Furn	aces			
17 - 1	134	211			194	306
18 - 1	137	215			198	312
19 — 1	140	219		0	202	318
20 - 1	143	223			206	322
21 - 1	146	230			210	332
22 - 1	149	238			214	343
23 - 1	151	245			218	354
24 - 1	154	254			222	366
25 - 1	157	263			226	379

TABLE 2

Drum Diameter	Typical Furnace Data ** Grate Diameter Inches	Grate Area Sq. Inches
18	14½ 15½ 16½	165 189 214
20	16½ 17½ 18½	214 241 269
22	18½ 19½ 20¼	269 300 331

\*Obtain from Manufacturers' Catalogue or Engineer-

\*\*Grate diameter varies within a given size drum because of variation in thickness of refractory.



Leader pipes and metal cold air drops have the joints taped. The wood box return uses asbestos board on the bottom. Asbestos board is used to pan joist spaces. All but one leader is 8-inch.

ON the Illinois side of the river (Rock Island and Moline) in the "Tri-Cities" area, a rather extensive and continuous program of war worker housing construction has been under way all during 1943. A number of private builders have put up these houses and so far the privately constructed housing units far exceed the number of government-built units.

In brief, most of these houses are frame construction above a full basement and within a 26 by 26-foot floor area, give the buyer a living room, two bedrooms, a bath, a kitchen with dinette, and considerable closet space.



Houses in the project meet Minimum Housing Standards yet they are comfortable, not bad looking and a God-send in the crowded Tri-Cities area.

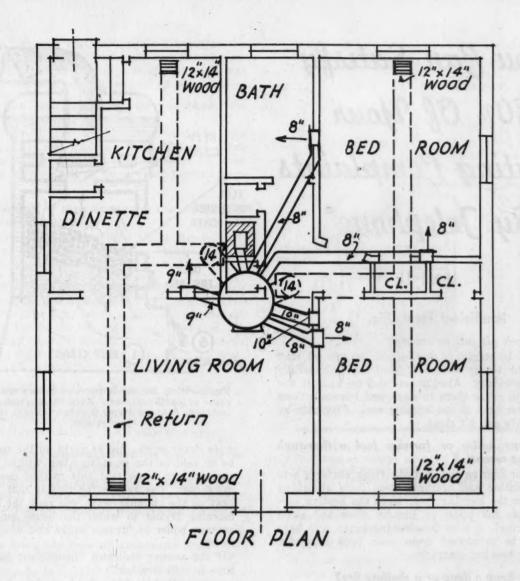
# Gravity, Coal Minimum Critical Materials Systems in Tri-Cities War Housing

War housing heating systems, under the drive for use of less and less critical materials, are becoming simpler month by month. These installations in the Tri-Cities show short leaders, wood and asbestos board returns and heating comfort many times better than stoves.

Tri-Cities buyers like full basements—basementless houses have, therefore, not been built in numbers beyond occasional speculation. The heating of these houses, then, follows established practice with a gravity, coal-burning, piped furnace in the basement—



In some houses one return passes above the bonnet. A metal sheet is used on the bottom of the wood sides as shown here as a fire safety measure. The plan facing shows layout system.



also the coal storage.

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The photographs and the floor layout of a typical group of houses shows the type of house built by C. E. Langeman & Son, builders, and the heating system designed and installed by M. J. Richeson, who operates as the Automatic Heating Equipment Company in Moline. This builder and this heating contractor have erected and heated several hundred such houses since the housing emergency arose in the area.

#### Simplified W. A. Distribution

As the illustrations show, the heating layout is simplified by using as many 8-inch warm air leaders as possible and one 9-inch or 10-inch pipe for the living room. All leaders are permitted galvanized iron with taped joints, but not full paper, by the local WPB.

### **Return Air System**

To obtain equalized collection of return air, a grille is placed toward all four outside corners as shown, each end pair being brought together between joists to form one large return air run across joists to the cold air drop. This makes two 14-inch returns to each furnage.

To save critical materials, the local WPB asks that return air runs use substitute materials so Richeson constructs between-joists runs by panning the bottom of the joist space with asbestos board. Then to build the across-joists run the two sides are built of 1-inch thick lumber as wide as needed. The top of the run is asbestos board and so is the bottom—the asbestos board being nailed to the wood sides before erection.

### Metal Bottom on C. A. Over Furnace

On the top of the return duct the asbestos board is carried from end to end, but on the bottom, where the metal drop is taken out, metal is used for a distance 18 inches back from the drop. One of the photographs shows this construction. This use of metal at the end of the return has been found especially acceptable in many of the houses where one return passes above the furnace bonnet (see photo).

Richeson also uses gypsum plaster board applied where and as described, and has local housing approval.

Registers are metal, in the baseboard—located as close to the furnace as possible to shorten runs. Return air grilles are wood, in the floor and placed as shown. A damper is placed in each warm air leader to balance heat delivery and up to the deadline on "liners in furnaces" a chain and dial manually operating control was put upstairs to operate draft and check. In the particular group of houses photographed, a 20-inch steel furnace was used.

# You Can Satisfy 80% Of Your Heating Complaints By Jelephone\*

[Part 2]

Insufficient Heat (Fig. 1)

1. Is the ash pit full or empty?

It should be empty. Ashes left in the ash pit shut off the air supply needed to burn coal successfully and economically. Also, ashes piled up against the grates will cause them to warp and burn out from the intense heat of the burning coal. Play safe by keeping the ash pit clean.

2. Has your boiler or furnace had a thorough cleaning recently?

Fly ash or dust on the heat absorbing surfaces acts like insulation and prevents them from absorbing heat from the burning fuel. Keep the heating surface inside the boiler or furnace clean and avoid waste of fuel. A wire flue-cleaning brush with handle can be purchased from your local hardware dealer or heating contractor.

3. Do you keep a deep or a shallow fire?

The deep fire is best. The top of the fire should be at least as high as the bottom of the firing door. There is no economy in maintaining a medium or shallow fire; in fact, a thin, skimpy fire is wasteful and require more attention than a deep fire. The deep fire keeps more of the burning coal in contact with the boiler or furnace fire-box walls where the heat is picked up and transferred to the home by the heating system.

# 4. Are you shaking the grate with short, jiggling strokes?

It is best to start the shaking with two or three long, full strokes. This clears away any large pieces of ash or clinker. Then follow with short strokes until a red glow appears in the ash pit.

5. Have you tried using the next larger size coal?

A larger size anthracite would burn faster with the same draft and, therefore, give more heat.

# 6. Do you experience insufficient heat mostly in the mornings?

(If the answer is "YES")

You may be banking the fire too severely. The house walls, the floors, the furniture, and everything in the house get cold and it probably takes until noon to regain a feeling of comfort. Try leaving a little

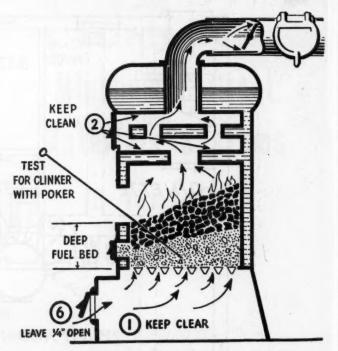


Fig. 1—Dirty heating furnaces or boilers are a prime cause of insufficient heat. Keep heater clean of ashes and soot. Also fire deeply to obtain uniform, maximum heat release.

5.

ASH

more draft on the fire at night so the rooms won't be so cold in the morning. You will be agreeably surprised to learn that this method does not use more coal. The reason for this is that you waste heat up the chimney when you rush the fire in the morning trying to warm the house quickly. The average boiler or furnace works best when it works slowly.

(If the answer indicates "insufficient heat all the time in cold weather")

—suggest that the house be checked for heat loss and equipment size, either by a heating contractor or an experienced service man.

# 7. Have you tested the fire-bed to see if it is clogged with clinker?

If clinker is present it will be difficult to push the poker through the fire to the grate. (See Index Heading "Clinker")

# 8. Do you have to wait a long time for the fire to pick up after drafts have been put on?

(If the answer is "YES")

Refer to "Poor Draft-Causes and Remedies."

# Overheating—Spring and Fall (Fig. 2)

1. Is it a new fire?

A new fire will sometimes burn too fast until a quantity of ash has accumulated on the grate. To minimize this, the following method of rebuilding a fire is recommended:

Do not dump the ash from the previous fire. With a poker or shovel, make a crater-shaped hole in the center, leaving a small part of the grate bare. Using a package of "Kindle-Pac" or kindling wood, build a small fire in the hole with all drafts on the fire. When the kindling material is well ignited, place coal on the fire. After the coal is burning freely, add sufficient coal to cover the full area of the fire box. The fire will gradually

<sup>\*</sup>Reprinted by permission from the booklet "Anthracite Telephone Service," by Anthracite Industries, Inc.

spread, but only that part which is over the recently exposed grate will burn rapidly; the remainder, which is over a thick layer of ash, will burn slowly and overheating will be prevented.

# 2. How often and how much do you shake the grates?

When little heat is required, shaking should be done less frequently and less vigorously. Allow a thick bed of ashes to remain on the grate. This will slow down the burning rate of the fire and prevent overheating.

# 3. Is the control or turn damper in the smoke pipe in operating condition?

The control damper sometimes sticks due to rust. Close it as far as possible, but not enough to force gases out into the basement.

# 4. Is there a check damper in the smoke pipe?

Check dampers are necessary for proper draft control of boilers and furnaces. A hinged check damper should be located in the smoke pipe, between the chimney and the turn damper. When open it allows air to cool the hot gases and will decrease the draft and cause the fire to burn more slowly.

# 5. How large is the check damper in relation to the smoke pipe?

To be effective the check damper area should be not less than three-fourths of the smoke pipe area.

# 6. Are there any openings between the boiler or furnace base and the floor?

Air passing through such openings reaches the fire and causes it to burn, even when the ash pit damper is closed. Seal the openings with cement for better control of the fire.

# 7. Do you have any type of automatic draft control?

(If the answer is "NO")

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It is very difficult for any home owner to operate the drafts by hand and not experience over-heating.

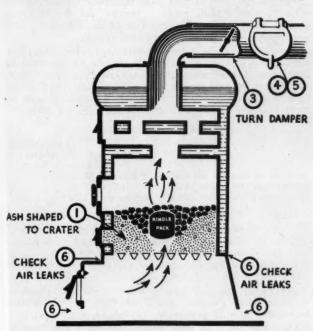


Fig. 2—Proper method of building a new fire. In mild weather tightly-fitting doors and dampers are necessary to keep the fire from running away.

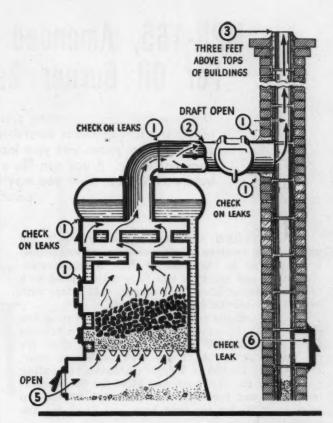


Fig. 3—Poor draft is a major cause of poor heating. The chimney should be tight, high enough, free of obstructions; heater must be clean; ash pit empty; all doors tightly fitting. Use this diagram to check causes of draft inadequacy.

Outside temperature changes are frequent, and even the most experienced fireman will miss the proper draft setting many times.

The installation of a thermostat provides mechanical control of drafts.

(If the answer is "YES")

Has the equipment been checked recently to see if it is in good working condition? Equipment needing adjustment can be the cause for overheating—your regulator may need a serviceman's attention.

### 8. How often do you experience overheating?

If it occurs infrequently it is probably due to leaving the draft on a little too long. As you know, a fire continues to burn for some time after the drafts are shut off, particularly when draft is good. Try setting the draft so the fire comes up more slowly

# Poor Draft—Causes and Remedies (Fig. 3)

## 1. Do you have to wait a long time for the fire to pick up after drafts have been put on?

This is very likely due to to air leaks which short circuit the draft. These are the small openings around the boiler or furnace doors and frames, or the smoke-box, or the smoke pipe, where one section joins another, or where the smoke pipe enters the masonry of the chimney.

These air leaks should be located and sealed with furnace cement or asbestos cement, either of which can be bought at the local hardware store or plumbing shop. The work can be done by the man of the house if he is accustomed to doing odd jobs about the place. To locate the air leaks, put all drafts on (Continued on page 80)

# MPR-165, Amended — Maximum Prices For Oil Burner Repair and Service

This new regulation covering prices to be charged for oil burner repair and service needs careful reading. If you have already filed your maximum prices with your local OPA board — this amendment does not apply. If you can file a statement showing higher prices before November I — you may be excluded. Again — read this carefully!

NIFORM maximum prices for repair and maintenance services on oil burners were established September 24 by the Office of Price Administration for dealers and suppliers who have not complied with requirements for filing their March, 1942 prices with local War Price and Rationing Boards.

The new ceilings vary according to the size of the city in which the service is performed. The maximum for cities of 500,000 population or over is \$2.50 for the first hour and \$1.75 for each succeeding hour. For cities of 100,000 to 500,000 population the ceiling is \$2.00 for the first hour, and \$1.50 for the succeeding hours, and for cities less than 100,000 the top price is \$1.50 for the first hour and \$1.25 for the succeeding hours.

The service ceilings were contained in Supplementary Service Regulation No. 19 to Maximum Price Regulation 165 (Services), which becomes effective September 23, 1943, and reads as follows:

PART 1499—COMMODITIES AND SERVICES
[MPR 165, as Amended, Supp. Service Reg. 19]
OIL BURNER SERVICES

§ 1499.671 Modification of maximum hourly or percall prices established by Maximum Price Regulation No. 165, as amended, for the maintenance and repair of oil burners burning No. 5 oil or lighter on either an hourly rate basis or a per call basis. (a) The prices specified below are the maximum prices to be charged by any person for the maintenance and repair of oil burners burning No. 5 oil or lighter, operating on either an hourly rate or a per-call rate basis within the forty-eight states of the United States and the District of Columbia except that;

(1) Suppliers operating on an hourly rate basis whose maximum prices under Maximum Price Regulation No. 165, as amended, are higher than those specified in this paragraph (a) and who have filed in accordance with the requirements of § 1499.108 (b) of that regulation shall

retain those maximum prices; and
(2) Suppliers operating on an hourly rate basis whose
maximum prices under Maximum Price Regulation No.
165, as amended, are higher than those specified in this
paragraph (a) and who have not filed in accordance with
the requirements of § 1499.108 (b) of that regulation may

paragraph (a) and who have not filed in accordance with the requirements of § 1499.108 (b) of that regulation may retain those maximum prices only if such suppliers file a statement with their local war price and rationing board on or before November 1, 1943, setting forth their maximum prices so established, including provisions relative to mileage charges, and the method of computing such maximum prices, whether on the basis of actual time spent on the job or on the basis of time spent going to and from the job. If the required statement is not filed on or before November 1, 1943, the maximum prices for such suppliers shall not exceed the prices specified below in this paragraph (a): Provided, That if any such supplier files the required statement at any time subsequent to November 1, 1943, the prices so filed, if in accordance with the provisions of Maximum Price Regulation No. 165, as amended, shall be deemed to be the maximum prices.

(3) Suppliers operating on a per-call basis whose maximum prices per call under Maximum Price Regulation No. 165, as amended, are higher than the hourly rates for the first hour specified in this paragraph (a) for their locality and who have filed in accordance with the requirements of § 1499.108 (b) of that regulation may either:

(i) Retain those maximum prices or,

(ii) Convert to an hourly rate basis and establish maximum prices on an hourly rate basis not higher than the hourly rates specified in this paragraph (a) for their

locality

(4) Suppliers operating on a per-call basis whose maximum prices per-call under Maximum Price Regulation No. 165, as amended, are higher than the hourly rates for the first hour specified in this paragraph (a) for their locality and who have not filed in accordance with the requirements of § 1499.108 (b) may retain those maximum prices only if such suppliers file a statement with the local war price and rationing board on or before November 1, 1943, setting forth their maximum prices so established. If the required statement is not filed on or before November 1, 1943, such suppliers shall be required to convert to an hourly rate basis and their maximum prices on an hourly rate basis shall not exceed the prices specified below in this paragraph (a): Provided, That if any such supplier files the required statement at any time subsequent to November 1, 1943, the prices so filed, if in accordance with the provisions of Maximum Price Regulation No. 165, as amended, shall be deemed to be the maximum prices.

For the purpose of this supplementary regulation the term "per-call" shall mean a service call for which a specific charge is made regardless of the length of time

consumed in furnishing the required service.

(5) Suppliers whose present rates are lower than those set forth in paragraph (a) below or who are required to furnish oil burner maintenance and repair services without charge in conjunction with the sale of No. 5 oil or lighter, may on and after September 23, 1943, charge no more than the rates set forth in paragraph (a) below.

#### TABLE OF HOURLY RATES

	0.4	Second and
In cities of 500,000 population or more In cities of 100,000 to 500,000 population	First hour \$2.50 2.00	succeeding hours \$1.75 1.50
In cities of less than 100,000 population	1.50	1.25

NOTE 1: Population figures shall be based upon the 1940 census as determined by the Bureau of the Census.

NOTE 2: The above rates are inclusive of mileage and all other charges. There may not be added any amounts representing mileage charges or for time spent going to and from the job, or for any other reason.

(b) Posting of maximum prices. All oil burner service suppliers whose properly established rates are higher than those set forth in paragraph (a) above, shall post in a conspicuous place in their establishments a duplicate of the statement filed with their local war price and rationing board, showing thereon the date on which the statement was filed.

# SHEET METAL

SECTION



DEVOTED TO SHEET METAL CONTRACTING AND FABRICATING



# Call us for General Purpose Steels

Our business is to help you keep war production moving, so if you need steel we'll get it to you in a hurry if at all possible—subject, of course, to priority restrictions. We can't always fill all requests because of material shortages, but, a call to us has solved many a supply problem. If you need steel, steel products, machinery or equipment, try us. Write, phone or wire our nearest warehouse. You will get prompt, courteous attention.

# We Welcome Inquiries On National Emergency Alloy Steels

These new steels have made it possible to meet many critical conditions imposed by the shortage of strategic alloys. They have given satisfactory results—in fact, have sometimes performed even better than the steels previously used.

We'll gladly assist you in determining the grades best suited to your needs. Get in touch with our nearest warehouse.

# **Aircraft Steels**

These steels are for use in airplanes and available at our Chicago Warehouse only. This warehouse has been designated by the War Production Board as a warehouse to distribute the aircraft steels listed below.

#### WD-X-4130 SHEETS

Open Hearth, Normalized, Pickled and Oiled to Spec. AN-QQ-S-685, Condition N. All gauges .016 to .50, sheets 18 x 72".

#### STAINLESS SHEETS

Spec. AN-QQ-S-772. Spec. AN-QQ-S-757.

# NE-8630 SHEETS

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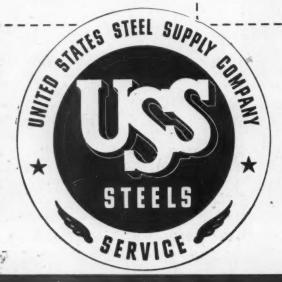
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Open Hearth, Normalized, Pickled and Oiled to Spec. AN-S-12, Condition N. All gauges .016 to .50, sheets 18 x 72".

## STAINLESS STEEL BARS

Spec. AN-QQ-S-771.

Write, phone or wire, if you are eligible for these steels.



# Send for a FREE copy of our new Stock List and Reference Book—just off the press.

CHICAGO (90),	1319 Wahansia Ave., P. C. Box MM	Teletype CG. 605	BRUnswick 2000
BALTIMORE (3),	Bush & Wicomico Sts., P. O. Box 2036	Teletype BA. 183	GILmore 3100
BOSTON (34),	176 Lincoln St., Allston, P. O. Box 42	Teletype BRTN. 10	STAdium 9400
CLEVELAND(14),	1394 E. 39th St.,	Teletype CV. 153	HEnderson 5750
MILWAUKEE (1),	4027 West Scott St., P. O. Box 2045	Teletype MI. 587	Mitchell 7500
NEWARK (1), N.J.,	Foot of Bessemer St., P. O. Box 479	Teletype NK. 74 REctor 2-6560	Bigelow 3-5920 - BErgen 3-1614
PITTSBURGH (12),	1281 Reedsdale St., N. S.	Teletype PG. 475	CEdar 7780
ST. LOUIS (3),	21st & Gratiet Sts.,	Teletype SL 384	MAin 5235
TWIN CITY,	2545 University Ave., St. Paul (4), Minn.	Teletype STP. 154	NEster 2821

# Asbestos - Cement Ducts — With Ceiling and Wall Forming Sides

IN ONE of the Chicago area's new war plants, the Haines Company, Chicago, developed the ideas shown in the drawings and photographs to expedite the fabrication and erection of asbestos-cement board ducts.

In this building main air supply is carried down the corridors; individual rooms are supplied by large branches which lie up against the concrete ceiling and in many rooms are also against the partition wall. Where branches stand free from the partition, the concrete ceiling forms the top of the duct leaving three sides to be constructed of asbestos-cement board panels and angle iron framing. Where branch ducts are against the ceiling and also against the partition wall, the bottom and one side were constructed of asbestos-cement board and the same metal framing used in the free standing ducts.

The construction of a typical branch duct is shown clearly in the perspective of a section of duct with explanatory details inserted to show cross sections of the metal framing. Two metal pieces form the basis for the construction. Longitudinal simple angles 1¼ by 1¼ inches were formed in 18-gauge black iron and were drilled in the Haines shop to take the 3/16 by 1½-inch stove bolts which hold the asbestos-cement board panels in the angles. These angles were formed 4-feet long (see drawing).

The top angle or angles (there are three angles



The finished duct is rigid, air tight, and attractive. This branch uses the ceiling and partition for two of its sides.



The framing (described in text) was erected first on Phillips shells. Then the asbestos-cement panels were slipped into place; holes were drilled using holes in angles as guide; panels were bolted and, finally, joints were caulked.

where the partition forms one side) were held to the concrete ceiling by bolts run into Phillips shells. Drilling the holes for the shells was a part of the Haines contract. Where the duct stands free of the partition, there had to be two top angles, but application was the same.

Vertically between the horizontal angles and placed at 4-foot centers the Haines company devised a double angle "T" formed of two 2 by 2 by \( \frac{1}{2}\)-inch bands placed leg to leg and tack welded in a jig so that the double angle afforded more than ample stiffening for the duct. The same double angle is used across the bottom of the duct as shown in the drawing. Bottom and side angles coincide.

The angle lengths were delivered to the job with bolt holes drilled in the Haines Chicago shop. On the job a simple jig was set up on a bench as shown in a photograph. The jig was adjustable so that any length

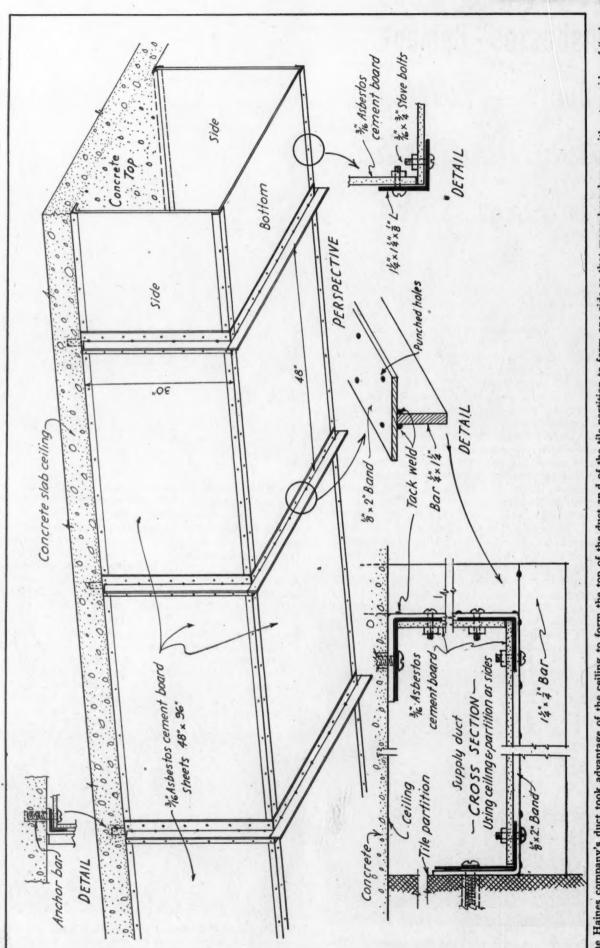


Framing was all fabricated in standard lengths and forms and holes for bolts drilled in the Haines shop. Erection was thereby simplified. Text describes framing formation.

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The Haines company's duct took advantage of the ceiling to form the top of the duct and of the tile partition to form one side so that many branches are either two sides of "substitute" board or three sides, but seldom a full, four-sided duct. Phillips shells were used to support the duct as shown in right detail.

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Angle guides were bolted along the side of the saw bench. Then the track for the saw was welded to these guides. The rails were drilled 1 inch apart to permit adjustment of the cut-off stop. Cuts were true and sawing reduced to a matter of seconds.

of double angle could be tack welded. The proper length of angle was cut off in a job angle cutter.

The finished framing provided an ample shelf on which to lay the asbestos-cement panels. One of the photographs shows typical panel procedure. First the side panels were slipped into position and bolted through the angles. Then the bottom panel was slid into place and bolted. One man with a caulking gun then filled the corners with plastic. Excess, if any, was removed with a putty knife.

The completed duct, as one photograph illustrates, is a neat, stiff, strong and air tight construction possessing the better characteristics of an all-metal duct, but more expensive. This greater erected cost will be explained later in this article.

#### **Sheet Sawing Setup**

The construction described called for the cutting to size of thousands of side and bottom panels of asbestos-cement board. Several cutting ideas were tried. Scratching the board a few times with sharp ice picks or awls and breaking the cut over the edge of the bench worked all right, but were not especially fast.

Another method of cutting was to place the sheet in the brake with a metal bar on top of the sheet and under the edge of the top leaf; then by raising the lower leaf smartly, the sheet could be broken—not too smoothly, but smooth enough. This was faster than scratching, but Haines organization finally developed the method shown in two photographs.

A rolling bench was built wide enough to take the 48-inch width of the 48 by 96-inch sheets. The top was wood. On the top, along each edge an angle was bolted down so that a track just over 48 inches wide was formed. Then running across the top a pair of angles was welded to the side angles as shown in the photograph, to form a track just wide enough to permit the carborundum saw to run inside the upright

legs of the angle track. The saw ran straight across the bench.

The track was built up high enough that when a 3/16-inch thick sheet was under the saw, the saw wheel just cut through the sheet a fraction of an inch. It was found that when the full depth of the wheel cut through the sheet, the wheel was apt to break and fly apart whereas when only a small segment of the wheel cut into the sheet it was practically impossible to break the carborundum disc.

Along the side rails holes were drilled exactly opposite and one inch apart. A stop bar was then built up to slide along the rails and on the top of the bench to act as a stop to set the sheet for any given number of inches of panel length. If fractions of an inch were required, small stop blocks were made to add ½, ¼ and ½-inch measurements.

The rolling bench was then placed at the end of a pile of sheets and the stop set to cut panels of required length. The sheet to be cut was slid off the pile, onto the bench, up against the stop and the saw was run across the sheet. A clean, right angle cut could be made in a few seconds.

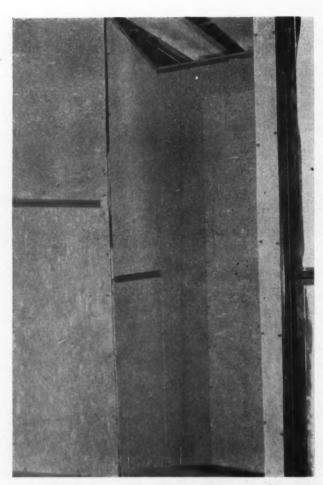
Since in this building these branch ducts are identical practically all through the building and since the Haines company purposely devised their panels for uniformity of length, more than 90 per cent of all asbestos-cement panels could be cut with the power wheel as explained. Odd shaped pieces needed for corners, risers, fillers, etc., could either be cut under the wheel by setting the stop or could be scratched or braked, whichever seemed quickest.

#### **Corridor Mains, Risers**

Three of the photographs show small risers for toilet exhaust, large exhaust stacks, large supply risers and supply shafts. These sections were framed the same as the branch ducts except that a double S pocket was used to join panel edges at points not at

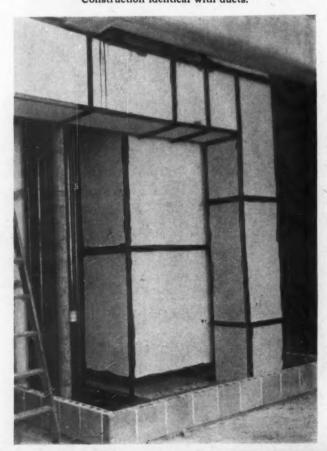


Job fixture in which framing was cut and tack welded for the double angles. Text describes use.



Above—Inside of a riser showing cross angles and caulking. Upper, right—Corridor main slabs being placed in position on wall corbells. Tongue and groove joints were brush cemented. Below—exterior of typical risers showing framing and generous caulking.

Construction identical with ducts.







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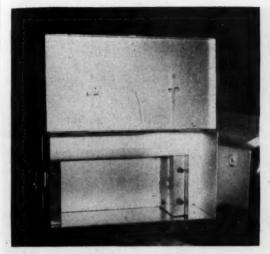
the framing angles. These S pockets are identical with similar pockets shown in details of other installations in this study. Where the sheets were slipped into these pockets, the caulking cement was also used to insure an air-tight joint.

It may be of interest to describe the corridor supply mains. Along the corridor partitions a ceramic corbel was built out into the corridor. On these twin corbels the precast slabs shown in several photographs were slid into position. Each slab was 2 inches thick, 16 inches wide, 8 feet long, weighed 130 pounds and was bound on all four edges with a galvanized tongue and groove strip. Thus the slabs slid into position formed a tongue and groove joint which was further sealed by applying a quick brush of cement into the groove. Ends were flat, of course, but were cemented. The branch supplies described connect to this main through holes in the partition. Supply air enters these corridor mains from the risers shown in other photographs.

Careful cost records kept during progress of the contract showed that the cost of material (asbestoscement board and metal) exceeded the cost of an all metal duct because there was more waste in the board and more hand work required.

The largest increased cost occurred in erecting. Where an all-metal duct could be assembled in sections on the floor and erected in place as a unit, it was necessary here to erect the framing piece by piece and then to fit individual panels of board into the framing. It required much bolting—the bolting called for holes drilled through the board working through previously drilled holes in the framing and then there was the additional caulking.

(Continued on page 82)





The finished box at the left is painted in aluminum; later boxes are finished in standard Navy gray. Right—After spray painting the boxes are moved on their planks to a corner of the B & N shop for air drying. Material is 16 gauge, stiff enough to eliminate any framing. Inside partitions help stiffen the box.

# **Electric Motor Spare Parts Box**

BIERSACH AND NIEDERMEYER COM-PANY, Milwaukee, one of Wisconsin's oldest and best known sheet metal fabricating plants, has for many months been producing an electric motor spare parts box for a local motor producer. At the time the accompanying photographs were taken, production was at the level of fifty finished boxes each day and since has been raised to 150 per day and can be further increased if necessary.

#### **Fabrication Schedule**

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Briefly, production of these boxes requires the following operations: cut all parts; form the body (two sides and bottom); form two ends; form interior partitions; form cover; spot weld ends into body; gas weld cover corners; spot weld on body and cover hardware; fit up box with cover; spray paint finished box including interior chocks.

The material of which the box is made is 16 gauge,

hot rolled and pickled and oiled. This material is stiff enough to eliminate any need for a frame and, as constructed by B & N, is satisfactorily rigid to transport a heavy motor rotor or other parts. This rigidity is obtained by flanging the body around the ends and spot welding through two thicknesses of material along the flange (see photographs). This construction is supplemented by the inside partitions which are also spot welded through flanges to the body (see photographs). The top, in turn, is flanged and mitered and the miter is lapped and spot welded to produce a rigid cover.

#### **Production Procedure**

There are three sizes of boxes photographed, but approximately 30 sizes have been made. With all blanks cut to size in the shop the next operation was to notch the body blank and form the two 90-degree bends for the two sides and the bottom. Meanwhile





Left—After shearing to size, the corner notches were cut in a die set-up in a small punch press. Right—The flanges of the partition were formed 90-degrees in a small die set-up placed in the press brake. A similar set-up was used to flange and bend the body blanks.

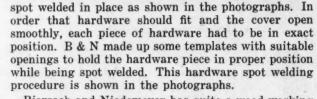


Above—Sheets were purchased as near to size as possible, then these blanks were cut to exact size in the power shear. A gage set-up for the body blanks was made at the near end; a smaller gage set-up was made for end blanks on the far end. Right—After final assembly, the cover was tested for fit. Where fit was not precise, a small amount of prying, as shown, corrected any mis-alignment. This workman also inspected hardware for position and fit.

the end blanks were placed at the spot welders and the formed body and ends were "stitched" together with frequent spot welds. Because the material is stiff no fixture or jig was necessary to hold ends and body in alignment during spot welding.

The cut-to-size cover blanks were notched and flanged on another press brake and the corners were gas welded. Like the body the cover was stiff enough to eliminate any need for fixtures to hold the cover true in welding.

Hardware consists of one handle on each end, two hinges, two cover clips, one hinged hasp on the cover with the staple on the body. All of this hardware was



Biersach and Niedemeyer has quite a wood working shop. This was put to use cutting to length and boring the wood chocks which show in one photograph.

The final mechanical operation consisted of trueing up the box. With all hardware in place the cover was





Left and right—Two views of the simple template used to posi tion hardware and hold hardware in place while spot welding.

The hinges are being welded here. Another template was used for the handles; a third for the hasp parts.

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Operator applying final aluminum paint coat—first spraying the inside including the wood chocks, then the outside. Sprayed boxes were moved on the planks shown.

closed and opened. If the cover should bind at any spot, the box or cover was levered in or out as required; the 16-gauge material taking such prying and retaining the movement. This truing up is shown in one of the photographs.

### **Finishing**

Each box had to be finished inside and outside. At the time the photographs were taken the finish was sprayed two coats of special aluminum paint. But

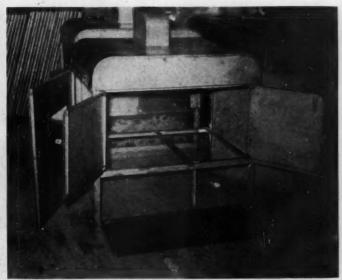
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B & N was also making, when these photos were taken, cabinets to house water distilling equipment for our troops in the field. Cabinet is 16 gauge; there are five doors; a special top is filled with equipment by the equipment manufacturer and the top is then installed by B & N. Angle iron frame is employed.

shortly afterwards the finish was changed to standard Navy gray; one bonderize treatment, one coat primer, one coat gray enamel. Spraying was done after the box was completely assembled—first spraying the inside and then the outside. So that boxes need not be handled, several boxes were placed on a wide board on trestles in the paint booth and sprayed. The boxes were not removed from the board, but the board with its boxes was moved to a corner of the B & N shop where the finish was air dried for eight to ten hours.

# Sheet Metal Contractors National Association Report

OCTOBER 23, the Board of Directors of the Sheet Metal Contractors National Association met in Chicago to discuss several matters of importance to the organization.

It was determined that, in view of the need for quick action on several problems, a national convention should be held as soon as possible. Chicago was selected as the convention city and the date will be as near January 15 as possible. A committee, under the chairmanship of R. H. Guenther will determine when hotel accommodations will be available. Final announcement will be made next month.

There are many problems pressing for solution; to handle these a committee was appointed to represent each activity in the association; this committee will, in each case, crystallize these problems and will seek ways and means of getting decisions enacted as quickly as possible.

Typical of these problems are "bid peddling", particularly acute now in roofing. Directors reported that "bid depositories" are in successful operation in Buffalo, N. Y., Louisville, Ky., Akron, Ohio and that these depositories have served to eliminate many of the evils of peddling. The possibility of a national depository plan to serve as the framework for local depositories will be investigated.

Manpower problems are also acute and the association will seek ways and means of obtaining recognition of the "essentiality" of mechanics not now so classified and will study methods whereby WMC boards and draft boards can be appraised of our needs and deferment obtained, legally.

In order to give each member maximum return for his membership, it was decided to classify members by principle activity. Accordingly there will be groups interested primarily in ventilating, warm air heating, roofing, industrial sheet metal work (including manufacturing) and general sheet metal work. A committee representing each group was established at the meeting—membership will be announced.

This committee will establish its group's most pressing problems and will serve as a clearing house to get action taken. At the national convention each group will meet individually to discuss its problems and give interested members an opportunity to concentrate on those problems without having to spend time in discussions not of interest.

Following is a report by Secretary Meyer to members:

The new "Sheet Metal Contractors' National Association, Inc.," is gaining in membership daily. Nearly one (Continued on page 78)



For almost 40 years OSBORN Golden Star Galvanized and Hot Rolled Sheets have been among the best known brands in the sheet metal industry. Today, although both their manufacture and sale are governed by War Production Board regulations, these sheets are more popular than ever.

When you need sheet steel, whether for war or permitted civilian work, we suggest that you call or write your nearest OSBORN warehouse. Our stocks of Golden Star Sheets are fairly complete and you can count on us to do our best to supply your requirements.

# THE J. M. & L. A.

BUFFALO . CINCINNATI . DETROIT Distributors of Metals and Metal Products

# Interpretations, Amendments, Easements Jo Existing Orders

## Labor Excluded in MRO

N computing quotas for maintenance, repair, and operating supplies under CMP Regulation No. 5, and in charging purchases against these quotas, manufacturers are permitted to exclude the cost of the labor involved, in carrying on such operations, the War Production Board has announced. However, if labor costs are excluded with respect to MRO purchases they must be excluded with respect to the quota computation.

This ruling is contained in Direction No. 13, to CMP Regulation No. 5, which also points out that items included in Lists A and B of Priorities Regulation No. 3 may be excluded from computation of the quota and purchases against it, but these items must be excluded from the computation of the quota

and the charges against the quota.

The Direction requires that MRO quotas must be computed, and that records of the computation and supporting work sheets must be kept for at least two years after the last purchase of MRO items under the Regulation. Persons purchasing under the regulation must also maintain a record of expenditures for MRO items for not less than two years.

# Oil for Replacement Burners

LUEL oil may now be obtained for use in newly installed home-heating burners if the new equipment replaces worn-out or inefficient oil burners, PAW announced October 14.

Action to permit deliveries to these new oil-burning facilities was taken by amending a formal PAW order (Petroleum Distribution Order No. 13), which previously prohibited the delivery of home-heating

fuel oil to any new oil-burner.

PAW explained that the action was taken to enable consumers to conserve fuel oil by increasing the efficiency of their burners. It is understood that corollary action will be taken by the War Production Board.

PAW emphasizes that the amended order continues the ban on delivery of fuel oil to new oil burning equipment located in a home or establishment that

previously did not have an oil burner.

The amendment to Order PDO No. 13 also includes a provision that will enable PAW to require fuel-oil consumers to convert to either gas or electricity whenever conditions warrant such action.

# L or M Order Appeals

A REVISION of Priorities Regulation No. 16, governing the filing, granting and denial of appeals from various L and M orders of the War Production Board, was issued October 8.

Of principal interest to manufacturers is the new List A to the regulation, enumerating orders from which appeals must be filed with WPB regional offices. This list now includes more than 180 such orders and is further evidence of WPB's continuing decentralization.

Orders affecting our industry which must be appealed to WPB district offices after November 1 are: L-13-A (metal office furniture); L-22 (furnaces); L-23-C (heating stoves); L-29 (metal signs); L-30-A (galvanized kitchen ware); L-38 and L-126 (air conditioning machinery); L-62 (metal household furniture); L-74 (oil burner); L-75 (stokers); L-77 (metal windows); L-79 (metal heating equipment); L-107 (extended surface heating equipment); L-142 (metal doors and windows); L-172 (heat exchangers); L-173 (oil and gas space heaters); L-228 (roofing products); L-280 (fans and blowers); M-126 (iron and steel products).

## **Fuel Oil Conversion**

LUEL oil rations will be granted to consumers using more than 10,000 gallons annually regardless of whether their equipment can be altered to the use of coal, the Office of Price Administration announced today. This marks the last of several steps taken since May to suspend the year-old conversion program.

Last August 24, OPA announced that all buildings using less than 10,000 gallons for heating purposes in 1942-43 would receive their 1943-44 fuel oil allotment regardless of whether their burners were technically convertible to coal. The present action removes all conversion requirements on buildings whose equipment used more than 10,000 gallons of fuel oil during

the last heating season.

A number of factors entered into the decision to end the conversion program, OPA said. These include a slight improvement in the oil supply, a dropping off in the coal supply, and the conversion of enough equipment from fuel oil to coal to effect an annual saving of about seventy million barrels of fuel oil. Although the fuel oil situation remains serious, the supply of coal is at a point where the short supplies of both, in relation to existing heating equipment, are in balance. In this situation it is desirable to suspend the program of converting equipment from oil to coal.

OPA expands its explanation by saying:

"In general it will not be easier to buy fuel oil than coal this winter in the ration area, and therefore it will not be to the advantage of a consumer who has converted from oil to coal to reconvert back to oil. Fuel oil rations will not be issued, except in extreme hardship cases, for equipment reconverted from coal to the use of fuel oil. OPA district directors must approve all applications for heating oil to supply such altered equipment from users who contend they will suffer unreasonable hardship unless the ration is issued.

"Although all consumers will receive fuel oil rations for 1943-44 without regard to convertibility,

(Continued on page 95)

# ISTORY OF THE

# NATIONAL WARM AIR HEATING and AIR CONDITIONING ASSOCIATION

By ... ALLEN W. WILLIAMS



# 1932-A Year of Research Progress

T was in 1932 that the research activity of the Association was both complimented and encouraged with substantial special contributions from the Detroit-Edison Company and the National Association of Ice Industries, neither of them members of the Association. These subscriptions made possible a broader study at the University of Illinois of summer cooling problems to be carried on in the Research Residence during the summer of 1932. Both of these appropriations came through the interest of the American Society of Heating and Ventilating Engineers in this investigation and were sufficient to pay for all the special equipment needed plus the salary of one full time and one part time associate.

#### Cooling With Ice

F. G. Sedgwick, chairman of the Research Advisory Committee, also explained at the May, 1932, convention that the first cooling would be by ice, but that research on mechanical refrigeration and other cooling methods would follow and further that the Association could soon expect to see real information on cooling with night air, and the use of water at various temperatures.

He also reported a cooperative research at the University of Minnesota, the object being to determine the cleaning efficiencies and resistances of various types of filters and washers. This investigation was directed by Professor Rowley, a national authority on the subject.

Chairman Sedgwick did not surprise the membership of the Association when he added:

"Our research work is by no means done. On the contrary, it has just entered what we of the Committee think will be its most interesting phase. The problems that lie ahead of us are so interesting and the outside cooperation is of such a nature that our research and our Research Residence will attract more attention, will receive more publicity and focus more respectful appreciation on our industry than ever."

#### 1932 Research Accomplishments

As an indication of how much was accomplished each year by the Research Staff, an outline of the developments for the year ending early in 1932 follows:

- I. General discussion and description of plant.
  - (1) Basis for the design of the system.
    - (a) Allowable velocities.
    - (b) Friction factors and pressure losses.

- (2) Layout of plant as installed.
  - (a) General layout.
  - Details of warm air ducts
  - Details of cold air returns. (c)
  - (d) Details of furnace and casing.
  - Details of fan. (e)
  - (f) Details of special connections and take-offs.
  - (g) Details of dampers.
- II. Preliminary results from plant before balancing and adjusting.
  - Register air and room temperatures.
- (2) Take-offs from warm air ducts.
- III. Adjustment and balancing of plant.
  - Register air and room temperatures. (1)
    - (2)Adjustment of dampers and take-offs.
    - (3)Intermittent operation.
  - High bonnet and equalization of bonnet (4) temperatures.
- IV. Performance characteristics of plant.
  - (1) Intermittent and continuous fan operation.
    - (a) Performance curves for latter only.
  - Velocities in ducts and at register faces.



Professor J. D. Hoffman. Chairman, Installation Codes Committee (3) Room temperatures gradients.

- (4) Combustion rates and power requirements.
- V. Control Systems.
  - (1) Temperature records.
  - (2) Analysis of control systems.

VI. Pressure losses in system.

- (1) Calculations and assumptions for design.
  - (a) Friction charts depend on proper selection of coefficient of friction.
- (2) Observed static pressures in system as a whole.
- (3) Analysis of static pressures in various parts of the system.
- Comparison of observed and calculated pressures.

(5) Performance of fan.

- (a) Relation between pressures and C. F. M.
- (b) Correlation of methods of measuring air flow.
- (c) Correlation between ratings and service conditions.

VII. Filters.

- (1) Pressure drops through clean filters.
- (2) Effect of length of service on pressure drops through filters.
- (3) Relation between pressure drops through filters and total pressure drop through system.

(4) Effect of filters on air delivery.

(5) Power requirements for system with filters.

VIII. Diverters at register faces.

- (1) Air distribution without diverters.
- (2) Air distribution with horizontal diverters.
- (3) Air distribution with vertical diverters.
- Discussion of and recommendations regarding factors for design of plants.

(1) Allowable velocities.

(2) Static pressures.

X. Preliminary studies on humidification.

- (1) Water required to raise the per cent humidity.
- (2) Rate of regain and loss in relative humidity.

The mid-year meeting in December, 1932, was held



W. L. McGrath, Williamson Heater Co., President 1932-1934

in Urbana in order that the members might have another opportunity to view the research work in action and for the first time see the paradox of a warm-air furnace operating as a summer cooling system in the Research Residence.

The registration at this gathering was so large that it tested the hotel capacity, not only of Urbana but of the adjoining city of Champaign. So many were present that it was necessary for the inspection trips planned to the Residence and the University Laboratories to be made in two groups.

#### 1933 Research Program

An outline of the research report, which followed, presented by Professor Willard, Professor Kratz and Special Research Associate Professor Konzo at this meeting, will indicate some of the many new problems constantly developing which made the research activity as essential as ever and caused the whole industry to wonder what would have happened had the investigation in cooperation with the University of Illinois never been established.

- I. Investigation of Forced Air Heating System.
  - 1) General discussion and description of plant.

2) Preliminary results on air washer.

3) Results on control systems.

II. Investigation of Summer Cooling.

- 1) General discussion and description of plant.
- 2) Selection and control of test conditions.

3) General results.

- a) Adaptability of forced air system.
- b) Allowable velocity of air at registers.

c) Overall ice meltage.

d) Basement losses.

e) Roof and attic temperatures.

4) Relative humidity and dehumidification.

5) Actual and calculated cooling load.

6) Effect of outdoor temperature on cooling load.

7) Effect of awnings.

- 8) Seasonal cooling load.
- 9) Daily variation in outdoor temperatures.

10) Results of test on unit coolers.

11) Conclusions and recommendations.

#### Free Engineering

About this time it was found that mechanical furnace heating and the demand for summer cooling, to a greater or less degree in homes and smaller buildings were making it necessary to render much more installation engineering assistance to heating contractors. Manufacturers felt the furnishing of free engineering service for a limited time to dealers might be justified, but that heating contractors for their own good should acquire the necessary information themselves. It was pointed out that dealers were anxious to learn, but the best help which a manufacturer could give a dealer would be to make it possible for him to help himself. That gradually came to be the accepted policy and it will be noted later that very definite methods to the end were adopted by the Association.

During the later part of the summer of 1932 the Association's Installation Codes Committee issued the first Mechanical Warm-Air Code. It was indicated as "tentative" and a limited edition of 6,000 was distributed.

It was a compliment to the ability and usual caution of the committee, of which J. D. Hoffman was the ef-

(Continued on page 94)

# NATIONAL WARM HEATING AND AIR CONDITIONING ASSOCIATION



# Hold Everything — We've Got an Idea!

IF you are working on a new design manual for forced air heating, hold it awhile. If you are concocting some diabolical scheme to shorten the time required to "figure a duct job" for forced-air work, hold that too. In fact, hold everything, for we have

Is there a short method of figuring duct sizes, that is still free of "bugs"? Is there a method that will avoid the complexities of estimating pressure losses, temperature drops, air recirculations, and equivalent lengths? Is there a method that will avoid figuring cfm, fpm, sq. in. and sq. ft.? Will this method take into account frictional resistance of streamline fittings and poor fittings? Is there a method so simple that it can be taught a beginner in a half-day short course? Is it sound and technically precise? Is there a chance to standardize on the sizes of boots, stacks, stackheads, and registers?

That's just what we are driving at. We have an idea that is fermenting, and we hope to drain off the final distillate soon.

At the coming December 8th and 9th meeting of the National Warm Air Heating and Air Conditioning Association in Cincinnati, we hope to present a preview of a proposed forced-air design manual that will enable any heating contractor to specify the duct, fittings, and register sizes, if he knows only the heat loss from the room, the length of the basement run of duct, and the type of fittings intended for the run. There will be no fussing with such items as bonnet temperatures, temperature drops, register temperatures, static pressures, cfm., fpm., or equivalent lengths, because all the fussing will have been done

beforehand in setting up the tables of capacities.

The Installation Codes Committee of the National Warm Air Heating and Air Conditioning Association and the Research Staff are concentrating their energies on a Forced Air Design Manual that should replace all existing design methods, including the Technical Code of the Association. We want one official design method that will be adopted by the entire industry, and we think we have an idea that will eventually result in just that. So, hold everything fellows, until you hear the preview at the Cincinnati meeting.

> By S. Konzo Special Research Professor University of Illinois

# Reminder!

30th Annual Convention—National Warm Air Heating and Air Conditioning Association December 8th, 1943-Netherland Plaza Hotel, Cincinnati, Ohio

You will heal such outstanding speakers as-

Thos. S. Holden, F. W. Dodge Corporation, who will speak on the Residential Construction market for 1944 and the post war years.

Foster G. Gunnison, dynamic president of the Gunnison Housing Corporation, who will talk on the plans of the pre-fabricated housing industry. He will have some brand new information which has not yet been previously announced.

Mr. Frederick V. Geier, President, Cincinnati Milling Machine Co., and Community Chairman of the Committee for Economic Development, will give specific information on the efforts of one industry for post war planning.

Mr. H. F. Randolph, International Heater Co., will talk on radiant heating.

Mr. Paul B. Zimmerman, chairman, Executive Board of the Indoor Climate Institute, will reveal plans of the Institute benefiting the warm air heating industry.

Representatives from the War Production Board and Office of Civilian Requirements, Washington, will be on the program.

Special Research Professor S. Konzo of the University of

Illinois, will report on various research problems. Walter Seelbach, member of the War Labor Board, 5th Region, will discuss labor problems and the Post War Information Committee of which W. L. McGrath of the Williamson Heater Co., is chairman, will answer specific post war problems from the floor.



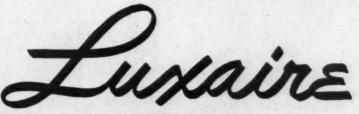
JITTERS—Yes, Invasion Jitters seem to be the Axis ailment. That dreadful fear which has now tightened its strangling grip on all enemy nations—when will they strike—where will they strike—strike with that tremendous power such as the world has never before known.

Those impenetrable defenses built to withstand years of assault are just another job for our tough, fighting men, but they must continue to get those superior weapons and supplies in a never-ending flow.

To help keep this never-ending flow of supplies, the production records established in the Luxaire plant in producing LUXAIRE warm air furnaces and air conditioning units, are being stepped up to their utmost in producing implements of war that stretch all the way from barracks to the fighting fronts.

We, at Luxaire, won't let down until this job is done. Our job is VICTORY.

BUY MORE WAR BONDS AND STAMPS



WARM AIR FURNACES . . . AIR CONDITIONING UNITS . . . COAL . . . GAS . . . OIL

THE C. A. OLSEN MANUFACTURING CO., ELYRIA, OHIO

# National Sheet Metal Distributors Meet 33rd Semi-Annual in New York City

THE National Association of Sheet Metal Distributors, meeting in New York City October 19, in conjunction with the National Wholesale Hardware Association, heard discussions from Washington authorities covering various problems of current importance, but in general, were not told any facts which have not been publicized previously, nor were the distributors given any particular encouragement on any early solution to these problems.

Opening the 33rd semi-annual meeting, President Eugene Foley, pointed out that for the foreseeable future, all business, including sheet metal distribution, must be conducted strictly in accordance with the rulings and dictates of men in Washington responsible for supplying the needs of Army, Navy, and essential civilian needs. The distributors, regardless of the details involved and shortages of manpower, must follow these regulations even though this will not be an easy job and there may be no "business as usual" for a long time to come.

#### **Post-War Re-employment**

President Foley suggested that each distributor so arrange his business that it will be possible for him to reabsorb former employees now in the armed services upon release. And he also pointed out that because of war requirements, many materials formerly used and distributed are now replaced by substitute materials which, in many cases, will prove so adaptable that the old material will not return to popularity.

There may likely be mass building projects and prefabricated building units in the postwar period, and there may be distribution of surplus government goods which, if released at distressed prices, will demoralize certain markets. Each distributor must arrange his affairs to accommodate these changes. President Foley also recommended that individuals refrain from purchasing excessively priced merchandise just because it is offered during the present shortage to be left holding the bag when improved or cheaper merchandise is available. The best method for meeting this problem is to reduce inventory; get rid of every item of slow-moving stuff, and so be ready to stock up later on.

#### Wholesaler Important Distributor

Mr. Foley offered the suggestion that much of the gossip concerning the distributor being "on his way out" is unfounded and that the Department of Labor in surveying the wholesale distributors learned that there are, in the United States, some 200,000 wholesalers who do an annual business of 55 billion and have an annual payroll of over two and one-half billion dollars. These figures do not indicate a vanishing industry. Statistics also show that 60 per cent of the two million retailers in this country did a business of less than ten thousand dollars each. These small retailers could not survive without the wholesaler supply lines and the support of the wholesaler who must extend credit, keep large quantities of items on hand, purchase well in advance of seasonable requirements, and offer many additional services. At the same time, the distributors offer service to the manufacturer by making purchases in carload quantities, well in advance of seasonal requirements, so that manPresident—Eugene Foley (Re-elected)
Bayonne Steel Products Co.
Newark, N. J.

1st VP. —Bruce Haines, E. E. Souther Iron Co., St. Louis, Mo.

2nd VP. —James G. Beard, Braden Mfg. Co., Inc., Terre Haute, Ind.

#### Executive Committee:

 F. Murphy, Lyon, Conklin & Co., Inc., Baltimore, Md. Thomas J. Quinn, W. F. Potts, Sons & Co., Inc., Philadelphia, Pa.

ufacturers can produce and dispose of their products economically and be assured of more uniform production.

#### **Manpower Problem**

Brig.-Gen. William C. Rose, Chief Executive Services, War Manpower Commission, declared that there is no predictable happy ending to the manpower problem of the distributing industry. He cited the fact that there are at present some 181/2 million people engaged directly in the production of goods for war, plus an additional 9 million engaged in agriculture permanently, plus a temporary 3 million agricultural workers, or a total of almost sixty per cent of the number of persons gainfully employed under normal conditions. Brig.-Gen. Rose said the fact that Government has divided the country into four critical labor zones indicates that the Government is well aware of the problems of manpower and is seeking some means to alleviate the critical condition. He emphasized that it is frequently difficult to get people to move from one spot where they are not employed to another area where they could be employed. Furthermore, the armed services will probably require a half-million men each year, so that for the firm requiring mechanics, the best opportunity seems to lie in employing women wherever possible; making provisions for the re-employment of discharged veterans; or, if possible, establishing a legal basis for deferment as set up by War Manpower Commission.

## **Material Restrictions**

James A. Fernley, Jr., Secretary-Treasurer of the association, pointed out that sooner or later there will be some easing in the civilian economy material restrictions, and that already government agencies have established some 700 essential civilian products for which some quantity of materials will be allocated in 1944.

J. R. Stuart, Chief, Warehouse Branch, Steel Division, WPB, reiterated the well-known fact that sheets are scarce and have been so, and likely will continue critical because of the conversion of the mills to the rolling of plate. The only likely easement will be when new production of sheets comes in and some of this may be absorbed in new plate requirements. Mr. Stuart also pointed out that WPB has to be careful in allocating sheets for civilian purposes in order that the allocation of such sheets does not also bring about an increased use in other critical materials which accompany the use of sheets. While wire products are critical, said Mr. Stuart, most jobbers are getting an increased supply of netting, barbed wire, etc. There

(Continued on Page 86)



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Notice how the paint has peeled and flaked on these gutters made of ordinary galvanized metal.

THE gutters on the house at the top show what can happen when there is a poor bond between paint and galvanized metal. Even when a painter takes time to acid-etch your work, the primary cause of paint failure is not overcome. The paint oils will still dry out and cause early peeling.

Compare this paint job with the one below. Here the gutters and down-spouts are made of Armco Galvanized Paintgrip Sheets—the original bonderized galvanized metal. It takes and preserves paint because it has a neutral

surface film that insulates the paint from the zinc. Tests indicate that good paint lasts several times longer on PAINT-GRIP than on ordinary galvanized metal.

Would you like more information on Armco Paintgrip for residential and industrial sheet metal work? This metal is now supplied only for war construction, but you can use it to advantage and profit on your post-war jobs. The

American Rolling Mill Company, 2951 Curtis St., Middletown, O.





#### THE AMERICAN ROLLING MILL COMPANY

Here's a PAINTGRIP roof-drainage system. It will need repainting only when the house itself is repainted.



# Association

#### **New York**

The New York States Sheet Metal, Roofing and Air Conditioning Contractors have been advised by Laverack and Haines who handle the group insurance fund that the group will receive a 30 per cent dividend for the year ending April 1, 1943, and that the surplus has been increased from approximately \$8,000 to about \$22,000.

If estimates are correct as noted below this will mean that the net cost to our members has been \$68.00 for each \$100 of premium at the regular rate and that we also are benefitted to the extent of about \$14,000 added to the reserve fund.

Perhaps the basis of computation as used below is not correct but I think it is.

Manual rate ......\$100.00 Less 15 per cent discount allowed by the state... 15.00

This makes a net saving of \$7.00 on the amount that an individual insurer would have to pay the State Fund if he insured direct on each \$10,000 of premium at manual rate.

In addition to this, each group insurer has an interest in the \$22,000 reserve fund which, apparently in two years, has amounted to something like 15 or 20 per cent of the premiums paid in.

Thus the group fund has justified itself and the expectations of our State Association.

H. A. DANIEL.

#### Michigan

The Michigan Sheet Metal, Roofing, Heating and Air-Conditioning Contractors' Association held a board meeting on October 22 at the Olds Hotel, Lansing, with President Vander Woude and members Schartow, Simmons, Latten, Hendrickson, Brundage, Biddle, Wierenga, Sherk, Delnay, Hosse, Avery and Sweet present.

The secretary reported briefly on the National association, Senate Bill 883—Business Outlook, Supreme Court decision re Sales Tax, Renegotiation, Contract Termination, Maximum Price Regulation 251, Furnace Situation, FHA rules and Minimum Standards, and the statement of George Boeddener, managing director of the National Warm Air Heating and Air Conditioning Association, relative to the new text book on furnace installation and the attraction of sales minded people to this industry.

The secretary presented a letter regarding Compensation Insurance, the gist of which was that if proper records were kept compensation need not be paid on premium pay.

It was moved, supported and carried that the President of the Auxiliary be requested to attend all Board meetings.

The proposal regarding the Bulletin is that the Bulletin is to carry a list of all advertisers in the Convention Program, all members of the Auxiliary and their representatives; is to boost the idea of co-operation between the Auxiliary members, advertisers and contractors, and is to be sent to the Auxiliary and program advertisers.

Convention plans call for the meeting to be held March 7, 8 and 9, with Hotel arrangements left to the discretion of the Muskegon group. Program arrangements are being left to President Vander Woude and Secretary Biddle.

N. J. BIDDLE, Secretary.

#### National

The National Warm Air Heating and Air Conditioning Association's 30th Annual Convention on December 8th, will have a crowded program. Previously it was planned to carry over the program to December 9th but in the war interest, it was deemed advisable to conserve time by holding a one day convention. So we emphasize again that the Convention Program will be held on Wednesday, December 8th. Committee and Board of Directors meetings will be held on Tuesday, December 7th.

Numerous and important subjects presented by men outstanding in industry will be on the convention program as follows:

Residential Construction in 1944 and future possibilities by Thomas S. Holden, President of the F. W. Dodge Corporation.

Labor problems by Walter L. Seelbach, member 5th Region War Labor Board, President—Gray Iron Founders Society and Secretary and Treasurer of the Forest City Foundry Co.

Heating industry plans for post war by P. B. Zimmerman, President, Indoor Climate Institute and Vice President and General Sales Manager, Airtemp Division of the Chrysler Corporation.

Post War Planning by Frederick V. Geier, Community Chairman—Committee of Economic Development and President of the Cincinnati Milling Machine Company. Mr. Geier will be our guest speaker at the luncheon.

Post War Information Committee of which W. L. Mc-Grath, Vice President and General Manager, Williamson Heater Co., is the chairman. (Send your questions in now to this Committee in Room 1001-1002 Society for Savings Building Cleveland Ohio.)

Building, Cleveland, Ohio.)
H. F. Randolph, Vice President, International Heater Company, will speak on the subject of "Radiant Heating."
Professor S. Konzo will outline the proposed short de-

sign method for forced warm air heating.

Representatives from the Plumbing and Heating Division and Office of Civilian Requirements of W.P.B. will present short subjects of interest to the industry.

In addition there will be election of officers and directors. The Cincinnati Entertainment Committee has made arrangements for an Informal Reception to which everyone attending the convention is invited.

President H. S. Sharp and the Program Committee of the Board of Directors have made all arrangements for the convention. This convention promises to be one of unusual interest to the warm air heating industry in determining the extent of its manufacturing limitations in 1944 and its post war marketing opportunities.

We send our cordial invitation to all members of the warm air heating industry to attend the convention. Make hotel and train reservations now.

GEORGE BOEDDENER, Man. Dir.

#### Wisconsin

The Sheet Metal Contractors Association of Wisconsin, Inc., decided, at their monthly meeting held October 8, to hold their 30th annual convention on Monday and Tuesday, February 7 and 8, 1944, at the Hotel Schroeder, Milwaukee.

Machinery will be set in motion to make the proper arrangements for a successful convention.

PAUL L. BIERSACH, Sec'y.

GENERAL OFFICES Е WAREHOUS CHICA NIGHT

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TELETYPE NUMBERS :- CHGO 1269 ... DET 33 ... CIN 64 ... DAY 146

## PRODUCTS

#### 69—Stack Exhauster

Belanger Fan & Blower Co., 1241 Eighteenth St., Detroit, has designed the Wolverine Stack Exhauster to meet an urgent need to change the inefficient gravity roof ventilators on war plants through the country into powerful fan ventilators. It was designed also to be placed in any duct system, either supply or exhaust, to make it efficient.

The Wolverine Stack Exhauster is made in a wide range of sizes and ca-



pacities to meet capacity, efficiency and noise level requirements. The stack exhauster increases the roof ventilator height slightly less than the stack exhauster height. Catalog Page 60 gives data.

Wolverine stack exhausters are constructed of heavy gauge steel, re-inforced with a cross member for motor support, welded to an inner circumferential steel ring. The propeller and motor are accessible for cleaning or lubrication through an inspection door of ample size. The unit—except the motor and fan blade—is finished inside and out with two coats of weather resisting lacquer.

#### • 70—Personalized Control

Minneapolis-Honeywell Regulator Co., 2726 Fourth Avenue South, Minneapolis, announces a personalized heating control for apartments—Individual Apartment Control, Sectional Control of Individual Apartments, and Individual Room Control.

By the proper placing of a thermostat with companion devices, Minneapolis-Honeywell provides this individual control. These automatic systems may be of the electric type or the pneumatic type. The electric system employs low voltage electric

For your convenience a number has been assigned to each item. Circle the items in which you are interested on the coupon on page 75 and mail to us.

\[ \triangle \text{Indicates manufacturer not listed in 1942 Directory.} \]

Indicates manufacturer not listed in 1942 Directory.

motors as power units to operate control valves in response to demand from room thermostats. The Pneumatic system makes use of diaphragm control valves which are operated from changes in air pressure caused by changes in temperature at the pneumatic thermostat. Remote manual control for the building engineer may be provided by a central control panel.

#### △ 71—Fireye

Combustion Control Corporation, 77 Broadway, Cambridge 42, Mass., announces Fireye Type F28C, a photoelectric system for providing instantaneous fuel cut-off in any pressure-fed burner in the event of flame failure; capable of monitoring flame of any intensity and applicable to oil,



FIREYE Type F29C

FIGURE

FIGU

Installation For Automatically Ignited Oil Burner

gas, or pulverized coal burners. Fireye operates entirely from direct observation of the flame.

Fireye flame failure Safeguard Type F28C is used with manually ignited burners to cut off fuel and sound an alarm; or, when the burner is automatically fired, with Program Relay Type R25, to program fuel pump and valve operation, intermittent ignition system, purging period, and recycling. While the electric eye sees flame, Fireye feeds fuel to the burner.

#### 72-4-Way Blowers

Utility Fan Corporation, 4851 South Alameda Street, Los Angeles 11, California, offers Standard Duty Blowers with four-way discharge. The new design permits installation in top horizontal, top vertical, bottom horizontal or bottom vertical.



Only a simple change in the bearing position is involved in altering the discharge of the blower.

#### △ 73—Researchco Clutch

The Amalgamated Engineering & Research Corporation, 100 W. Monroe St., Chicago 3, announces a new type of automatically engaging and self-disengaging centrifugal clutch. This new clutch which can be produced in an unlimited range of sizes and capacities, can serve either as a



coupling between shafts or as a driving pulley or gear in a transmission, as well as a starting cushion between power units and driven mechanisms.

This new unit, known as the "TOR-KONTROL", consists of a partially filled oil chamber fitted with a freely rotating hub, which carries a series of movable wedge shaped flyweights. As the hub revolves these weights fly outwardly and engage the internal rims of the outer case.

## SECONDARY ALUMINUM IS DOING A PRIMARY WAR JOB

Radial Aircraft Engine Parts Tank Diesel Engine Parts Fuses and Ammunition Fire Control Gun Synchronizer Parts Aerial Radio Parts Navigation Instruments **Aerial Cameras Bearing Supports** Brake Housings Brake Shoes Cowl Rings Drive Cases on Tanks Transmission Cases on Tanks Range Correction Board Seacoast Computer

Oil Gear Unit Box, 40 mm Gun Pistons **Booster Pump Assemblies** Upper and Lower Gun Turrets on Aircraft Aircraft Lights and Fixtures Gun Synchronizer Parts Lamp Assemblies Telescope Parts Hand Tachometer for Measuring Speed of Propellers Airborne Radio Gear Housing Assembly **Electric Cable Connectors** 

This partial list of wartime uses of secondary aluminum may suggest its adaptability to your own product

## THE UGLY DUCKLING HAS BECOME A SWAN!

Let's eliminate the old idea about so-called "secondary" aluminum. Don't forget that the entire steel industry is based on the use of scrap... yet no one refers to steel as "primary" or "secondary." The same is true of ingot brass and bronze. The source

of raw materials need not be a reflection of the quality of the finished product—particularly when all industry is observing W.P.B.'s program of scrap segregation.

Today, thanks to that careful segregation (an advance that will not be lost when the war is over) and thanks to advances in technical knowledge and metallurgical processes, the secondary smelter is producing products of superb quality.

Consulting service on aluminum and other non-ferrous alloys available through your nearest Federated office.



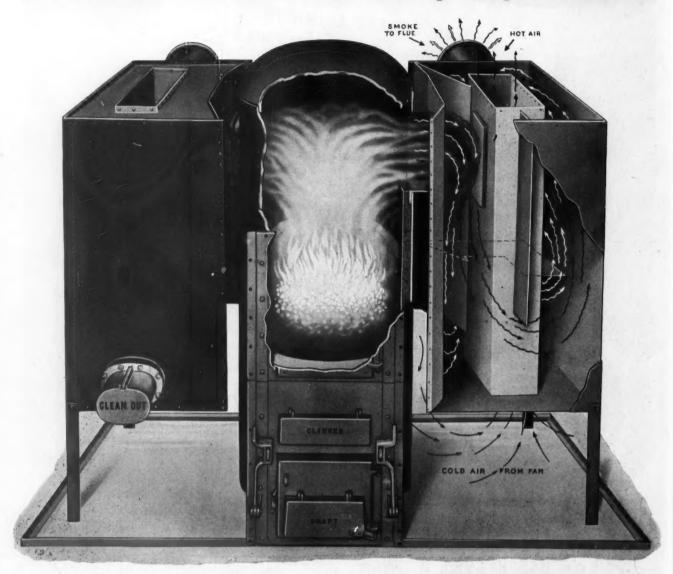
& ewd n. -sa

Federated

AMERICAN SMELTING and REFINING COMPANY

elation-wide service with offices in principal cities

## PEERLESS Commander Heavy-Duty FURNACE



## CAPACITY TO 3/4 MILLION B. T. U.'s

FOR EXTRA LARGE BUILDINGS, SCHOOLS, BARRACKS, FACTORIES, ETC.

Note the dual radiators, which practically double the heating surface of this big heavy-duty furnace. Note (arrows) the long travel of smoke and gas through radiators to smoke pipe. Note how heat divides and goes equally into the two radiators—also how the series of baffles force the heat to outside surface of radiators, where it is wiped off by return air from blower.

Note the large size combusion chamber. Total

grate area, 1,048 square inches. Locomotive type grates. Total heating surface, 30,959 square inches... Built of extra heavy boiler plate, riveted and welded. Smoke-tight, gas-tight, dust-tight. Burns either coal, coke or wood. Adaptable to either hand-firing or stoker operation. For most efficient operation a PEER-LESS Cleanaire Blower is needed. Available under W.P.B. regulations.

Wire or Write for Descriptive Literature and Complete Information on other sizes of Peerless Warm Air Furnaces

## THE PEERLESS FOUNDRY COMPANY, Indianapolis, Ind.

Pioneers in Warm Air Heating for Over a Third of a Century

#### New Literature

For your convenience in obtaining copies of new Literature use the coupon on this page.

#### 291-"Be a Sweat Donor"

May Oil Burner Corporation, Maryland Ave. & Oliver St., Baltimore, Md., is distributing a wall poster to aid the 3rd War Bond Drive, urging workers to "Be a Sweat Donor, too,"—to "stick to your job," to "fight with your sweat" and buy more bonds. The company makes "Quiet May" oil burners and "Gertor" hydraulic pumps.

#### 292—Stock List and Reference Book

United States Steel Supply Company, 1319 Wabansia Ave., Chicago 90, Illinois, has just issued Stock List and Reference Book No. 1. Spirally Bound, 5¼ x 9 in., the book is indexed and sections are tabbed to help locate stocks of steel, steel products, tools, equipment and machinery handled.

Useful information, reference tables, specifications, physical properties, color code, cutting extras, tolerances and other data are included.

### 293—Porcelain Enamel—The Lifetime

The American Rolling Mill Company, Middletown, Ohio, has just published "Porcelain Enamel, the Lifetime Finish," containing useful data.

Engineering information is given on the abrasion and friction resistance, weather resistance, resistance to chipping, resistance to thermal shock, color fastness and range, finishes available, chemical resistance and physical properties of porcelain enamel. Its physical properties also are compared with those of many other materials.

Drawings are used to illustrate several of the "do's" and "don'ts" of designing products that are to be porcelain enameled.

The importance of a highly refined sheet iron with special surface characteristics, and physical properties best suited for porcelain enameling, is the subject of another section.

A brief explanation of the methods of making porcelain enamel, and a "bird's eye view" of the porcelain enameling industry and its production facilities, should be interesting to many new users of porcelain enameled iron in post-war development.

Supplementing Anthracite With Other Fuels—The Bureau of Mines has prepared an information circular called "Supplementing Anthracite With Other Fuels for Home Heating"—being distributed by the Solid Fuels Administration with suggestions as to how bituminous coal may be burned successfully in anthracite equipment for the benefit of New England and the Atlantic Seaboard householders threatened with a shortage of hard coal this winter.

Copies of Information Circular 7260 is free, by writing to the Division of Information, Solid Fuels Administration, Interior Department, Washington 25, D. C. Coupon No. 294.

#### FOR YOUR CONVENIENCE

American Artisan, 6 N. Michigan Ave. Chicago, III.

Please ask the manufacturer to send me more information about the equipment mentioned under the following reference numbers in "New Products" and "New Literature." (Circle numbers in which you are interested):

69	70	71	72	73
291	292	293	294	
Name				
Company				*****

Address .

Are you Manufacturer—Jobber—Dealer—



Since automatic controls are essential to modern, mechanized warfare, the greater part of our production is devoted to turning out vitally necessary precision built equipment.

The specialized skills used to hasten the day of Victory will also serve after the peace is won. When that day comes, knowledge gained from wartime experience will be used to good advantage.

Automatic controls will give the American of tomorrow even higher standards of living and production efficiency than those now enjoyed. We will be ready to maintain our reputation as pioneers and leaders in this field.

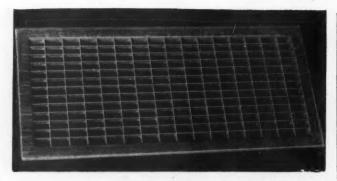
TWO-WAY CURRENT FAILURE VALVES

General Controls G-I Series Valvés are two-way current failure "Hydramotor Valves designed for operating pressures up to 300 lbs. G-I Valves are suitable for gas, oil, water, air and steam. Approximate opening time 8-10 seconds; closing—2 seconds. Operator dimension only 41/4", diameter 6" high, weight approximately 71/2 lbs. Write for Catalog 52.

\*Trademark registered United States Patent Office.

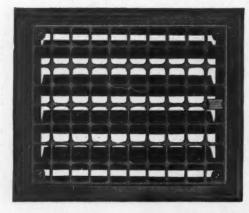






#### H & C No. 265 — the IDEAL Face For Maintenance and Repair!

Sturdy and rigid, neat and trim in every detail, the H & C No. 265 "No-FLEX" is unquestionably the finest Return Air Face on the market—the kind of merchandise it pays to handle. Costs no more than others.



#### H & C No. 200 — an Excellent Floor Register — Available for Prompt Shipment.

With attractive appearance, strong timetested construction—all that a good floor register should be—the H & C No. 200 also conforms to the patriotic duty of conalso conforms to the patriotic duty of conserving materials and manpower. Now being made in all of the following sizes: 6x8, 8x10, 8x12, 9x12, 10x12, 10x14, 12x14, 14x16. (Black Japan and Oak). Other H & C registers available are the No. 130 Baseboard, Nos. 330 and 345 Sidewalls and all the popular H & C Air Conditioning Designs. For details see current catalog No. 42 alog No. 42.



#### HART & COOLEY MANUFACTURING CO.

**World's Largest Manufacturers of** Registers, Grilles, Furnace Accessories **HOLLAND • MICHIGAN** 

#### With the Manufacturers . .

#### Brauer Holds Annual Picnic

The A. G. Brauer Supply Company, 2100 Washington Ave., St. Louis—jobbers—held their annual picnic on August 22 at Cherry Hill Farm, about 8 miles from St. Louis. Some 95 employees attended.

Eight of their experienced employees have been called to the service.

#### **Tom Byrd Joins Lau Blower**

Tom I. Byrd, who was connected with The American Rolling Mill Company for the past 15 years, has joined The Lau Blower Company, 2001 Home Avenue, Dayton, Ohio—manufacturers of air handling equipment—as sales manager. Through his association with American Rolling Mill, Mr. Byrd knows practically all the manufacturers in the warm air heating industry as well as a great many hundreds of sheet metal contractors. Tom expects to spend considerable time in the field and will contact the various manufacturing customers-E. B. Lau, President.

#### Williamson to Manufacture Steel Furnaces

The Williamson Heater Company, 337 West Fifth Street, Cincinnati 2, Ohio, has purchased the steel furnace business from Michigan Tank and Furnace Corporation of Detroit including patterns, drawings, jigs, etc. With the acquisition of this steel furnace business and manufacturing facilities, Williamson will be able to produce steel furnaces completely in its plant at Oakley, Cincinnati.

W. L. McGrath, Executive Vice President, believes that this move further improves an already full line of resi-

dential heating equipment for post-war.

### HEC DAMPER REGULATOR SETS



ECONOMY TYPE. Three ways to install: 1. With lock nut but without handle (for tamper-proof setting). 2. With handle and lock nut. 3. With handle and wing nut. Nut prevents damper vibration. Handle always indicates position of damper (Patent 2,146,142). Furnished with handly snap end bearing. Complete handy snap end bearing. Comp set in carton. Made only with bearings.

LIST PRICE..... No. 401/45....\$0.30



BRACKET TYPE. Nut holds damper securely, preventing vibration. Handle which indicates position of damper, may be left in place permanently or removed after adjustment (to prevent tampering). Snapend Bearing on ½" size. Solid Bearing on ½" size. Each set individually packaged.

LIST PRICES....No. 501/4....\$0.40 No. 501/4....\$0.60



DISK TYPE. Like all H&C sets, this set is equally adaptable to splitter or regular dampers. Snap End Bearing on 1/4" size, Solid Bearing on 1/4" size. All parts are rust proofed. Complete set in carton. LIST PRICES ..... No. 801/4 ..... \$0.40 No. 80% .....\$0.40

See your jobber or write for literature and sample.

HART & COOLEY MANUFACTURING CO. HOLLAND, MICH. . PHILADELPHIA OFFICE: 1600 ARCH ST.

### With the Manufacturers ...

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#### **Koppers Acquires Plastipitch**

All physical assets of Coated Products Corporation, of Verona, Pa., have been purchased by Koppers Company, Pittsburgh, and the business will continue in operation without interruption as the Coated Products Division of Koppers Company, it is announced by J. N. Forker, vice president of Koppers Company.

Acquired by Koppers through this transaction are all rights in the Plastipitch process of weather proofing and corrosion proofing of prefabricated metals and steel shapes. Morton I. Dorfan, formerly associated with the Coated Products Corporation, has been appointed manager of the new Koppers division.

The purchase does not include acquisition of any of the stock of Coated Products Corporation nor the assumption by Koppers of any of its liabilities.

#### **Allegheny Ludlum Carbide Division**

W. F. Detwiler, Chairman of the Board of the Allegheny Ludlum Steel Corporation, Brackenridge, Pa., has announced his company's recent acquisition of the Carbide Alloy Corporation of New York City. The property will henceforth be operated as Allegheny Ludlum's Carbide Division.

"The new Carbide Division," he added, "recognizes late developments in the field of metal-working, and is calculated both to round out and enhance Allegheny Ludlum's service to the fabricating industries of the country.

Initial products of the company's new manufacturing division will be a line of highly developed cemented carbides, produced under processes established by Carbide Alloy Corporation.

#### Personnel

Appointment of Harvey A. Craig as District Sales Manager of Republic Steel Corporation in the Los Angeles district has been announced by N. J. Clarke, Vice President in charge of sales. Arthur C. Geldner will be Assistant District Sales Manager in this territory.

For many years Mr. Craig was Vice President of Rheem Manufacturing Company, Richmond, California.

R. J. Russell, Vice-President and Sales Manager of the Century Electric Company, St. Louis, has been elected President of the Associated Industries of Missouri.

The Associated Industries of Missouri is an organization devoted to the promotion of fair business and employee relations policies among employers and employees in Missouri industries. It is organized for the purpose of exchanging views, setting policies that will lead to a better understanding of both employers' and employees' problems, and to eliminate causes of misunderstanding.

Elmer Donnell was elected Executive Vice-President.

The L. J. Mueller Furnace Company, Milwaukee, Wisconsin, announces the addition of Messrs. Roy W. Weekes and N. E. Hill to its Engineering Department staff.

Mr. Weekes is a Mechanical Engineering graduate of the University of Iowa. Previous to joining the Mueller Organization he had served, for several years, as heating and air conditioning engineer with the Iowa-Illinois Gas and Electric Company, Iowa City, Iowa; also as designing engineer with an architectural firm in Pittsburgh.

Mr. Hill was graduated from the University of Kentucky in Mechanical Engineering. He has also completed a course in heating and ventilating at the University of Michigan, and studied metallurgy at Columbia University. For the past twelve years Mr. Hill has been engaged in engineering design and development work for a large heating equipment manufacturer.



## Uncle Sam HELPS YOU SELL Draft-O-Stat

-and there's a reason. For Draft-O-Stat makes from 10% to 30% more fuel available for war needs. That's why Draft-O-Stat is on the approved WPB list of fuel-saving devices that can be sold without priority. Take advantage of this situation -increase your own profits and help win the war by recommending Draft-O-Stat on all furnace jobs.

#### HOTSTREAM MOTORIZED

Draft - O - Stat

Cuts fuel bills 10% to 30%

Scientific automatic control of chimney draft saves fuel during both "on" and "off" periods of oil, stoker or thermostat-controlled hand-fired coal furnaces. Completely adjustable for most efficient operation. Low priced—easily installed. Write for descriptive literature—prices and liberal discounts.



Hotstream Model "BM" Motorized Draft-O-Stat



## Sheet Metal Contr's Meeting

(Continued from page 61)

hundred contractors and associate members have joined our ranks since its inception.

To date we have members in the following states: The Carolinas, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Minnesota, Missouri, Nebraska, New York, Ohio, California, Pennsylvania, Texas, and Wisconsin. There are also many State Associations contemplating joining in a group.

The Association is now incorporated under the laws of the State of New York as a non-profit Association, made up of employers, for the benefit of the Sheet Metal and Allied Industries. Much work remains to be done in the way of organization. We need the United support of the entire 48 states with their contractors in the industry, so that, when we speak for representation, we speak nationally.

It is up to each and everyone in the industry who has joined to date, to make himself a committee of one, to help increase our membership. This can be done by calling local and state meetings for the purpose of laying before your Associates the fact that we need their cooperation. Many timely subjects are worthy of our attention, and you will be called upon to use your influence with your legislators to help the cause along. Until we have ample financial means to do the things that we know must be done, we will be restricted in our efforts and the sooner that the membership is increased (through the efforts of you who had the faith to join on the first call to arms) the sooner we can get going.

There are no salaries being paid to any of the officers or your secretary, so that all of the moneys received to date are going into building up for the future.

The first of our efforts, with your help, is to support the following bills in Senate S.883 and Congress H.R. 2201.

S.883 provides for an Assistant Secretary of Commerce for Small Business.

The Secretary of Commerce shall make an annual report to the President, the President of the Senate, and the Speaker of the House of Representatives, of the operation of the office of the Assistant Secretary of Commerce for Small Business including such other information and such comments and recommendations with respect to American small business and small-business problems as he may deem appropriate.

These bills have been introduced through the efforts of the "Conference of American Small Business" and if passed will be one step toward the security of "Small business" which is what we are all composed of. Write your Congressmen and Senators at once asking them to support these Bills. In the meantime "Buy Bonds" to back up those who are fighting the battle to "save America" so that we can maintain the American way of doing business.

Our Constitution and By-Laws provide for the membership of Manufacturers and Jobbers as Associate members. Quite a number of them have been asked to join and to date the following firms have applied and paid:

to date the following firms have applied and paid Aeroil Burner Co., Inc., West New York, New Jersey The Allen Corp., Detroit Berger Bros. Co., Philadelphia Champion Furnace Pipe Co., Peoria, Illinois Detroit Safety Furnace Pipe Co., Detroit Downs-Smith Brass & Copper Co., Inc., New York F. Meyer & Bro. Co., Peoria, Ill. David Levow, New York Register & Grille Mfg. Co., Inc., Brooklyn Research Products Corp., Madison, Wisconsin Round Oak Company, Dowagiac, Michigan Henry Siebert Sons, Inc., Rochester, N. Y. Superior Safety Furnace Pipe Co., Detroit Schill Mfg. Co., Crestline, Ohio The Peck, Stow & Wilcox Co., Southington, Conn. The Auer Register Co., Cleveland



#### Here are Syncromatic's big popularity points:

- Genuine counter flow heat exchanger—a most efficient method of heat transfer.
- 2 Air travel to all parts of heated surfaces. No hot spots, no burn-outs.
- 3 Heavy 10-gauge completely electrically welded units.
- 4 Isolated genuine fire brick fire pot heats carbons in fuel for highest burning efficiency.
- 's big popularity points:

  5 Vertical cleaning flues for best all winter performance.
  - 6 Complete accessible soot and flyash clean out.
  - Long reverse fuel travel for perfect automatic firing of all solid fuel.
  - 8 Low replacement costs in standard fire brick fire pots.

## Syncromatic UNIT STANDARDIZATION Means Economy!

Here's the deal you've been waiting for... complete unit standardization to eliminate headaches and guesswork in furnace maintenance. Syncromatic's line of six coal fired steel furnaces have identical fronts, shakers, grates and casings (except for sides.) This means ready interchange-

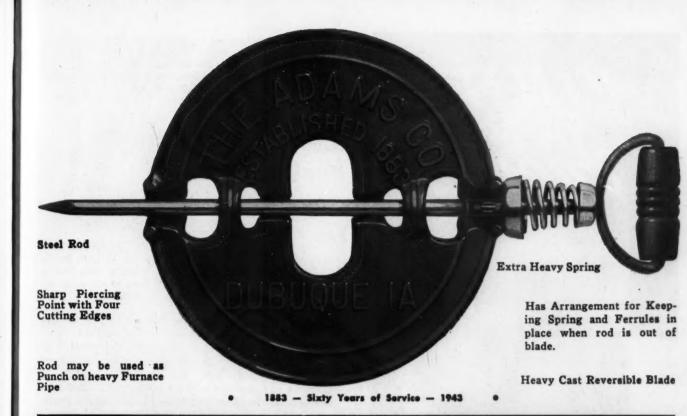
ability with all the resultant economy in stocks and time.

Syncromatic Products are sold on a well defined *Jobber* to *Dealer* policy which insures efficient distribution to the trade. Write today for complete details on the many fine, original features which places Syncromatic at the top of the list.

## Syncromatic Corporation

3373 N. HOLTON STREET

MILWAUKEE 12, WIS.



## ADAMS DIAMOND SMOKE PIPE DAMPER MANUFACTURED BY THE ADAMS COMPANY DUBUQUE, 10WA, U. S. A.

# a HOT SEAT for HIROHITO?

WELL, not exactly—although we hope it will contribute indirectly to "that end"! \* All we can say now is that the device illustrated is highly valued by the U. S. Army, and is one of many war products PAYNE is making for Uncle Sam. \* In fact, our facilities are devoted entirely to supplying the armed forces; and we know you would have it that way. \* But after the war, count on PAYNE Furnaces, as in the past, for years-ahead design and years-on-end performance.



Payne FURNACE & SUPPLY CO., INC., BEVERLY HILLS, CALIFORNIA

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Ask your manufacturer or jobber for their support of this new Association which is for the mutual benefit of all in the industry. The Manufacturer or Jobber can contribute what they care to or have each one of their traveling representatives join at \$5.00 per year.

CLARENCE J. MEYER, National Secretary.

## Heating Complaints Handled by Telephone

(Continued from page 51)

the boiler or furnace and using a lighted candle, pass the flame close to any openings just mentioned. If the flame bends toward or into the openings it indicates that air is being drawn in at that point. This leakage reduces draft by chilling the inside of the heater and chimney and robs the fire of air that is needed for combustion.

2. Has the position of the turn damper in the smoke pipe been checked?

The position of the handle indicates the position of the damper. For example: if the handle stands across the smoke pipe, the damper is closed. If there is any doubt about its position, it should be checked. If closed too far, it could spoil a good draft.

3. Has anyone examined the top of the chimney to see if it extends above nearby obstructions? Overhanging branches of trees, the peak of the roof, or any nearby buildings obstruct the free movement of gases from a chimney. They create downdrafts which cause sluggish fires, poor combustion and excessive fuel bills, in addition to unsatisfactory heating.

4. Does your cellar seem uncomfortably warm or stuffy?

(If the answer is "YES")

The cellar is air bound and that affects the draft. A fire cannot burn correctly unless it gets plenty of air. Therefore, do not allow openings around cellar windows or doors to be closed. It is better to have a little too much rather than too little air in the basement.

5. Do you bank the fire severely?

The best and easiest way to overcome a poor draft condition is never to bank the fire completely. By keeping the fire burning slowly, even when banked, the chimney will be kept warm and draft maintained ready to speed up the fire when needed. In cold weather it is advisable to keep the draft door in the ash pit open about a quarter-inch to maintain a steady flow of air under the grate. This is particularly important where poor draft is encountered.

6. Is there a cleanout opening in the base of the chimney?

This is an access door through which fly ash or dust is removed from the chimney and is one of the most frequently encountered causes for poor draft. It must be kept tightly closed and sealed with furnace cement. In fact, it would be better to fill it with ashes or sand any openings in the base of the chimney below the point where the smoke pipe enters. This method permanently seals the cleanout door opening. This definitely improves draft.

[To be continued]



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Getting every last degree of heating comfort out of a gallon of fuel is even more important in wartime than in times of peace. This is one of the important features of A-P DEPENDABLE Oil Control Valves—proven in thousands of homes—and vital today on heating units in training camps and on fighting fronts as well.

Heating and cooking on a minimum of fuel has always been one of the prime objectives of A-P's continuing re-

search and development in accurate dependable fuel controls. Proven in the past, this will again pace future developments in new post-war heating and cooking appliances. In fact, many designers and engineers are already using A-P research to assure the "Dividends of A-P Dependability" in their new products, tying in on the rich accumulation of knowledge in new control applications that wartime progress has developed. Watch for these developments on YOUR new products.



In the Homes of the Nation (Oil Burning Heaters)



In Training Camps (Barracks Heaters, Cooking Ranges)



In Ship Galleys (Cooking Ranges—A-P Oilifter)

#### **Automatic Products Company**

2452 North Thirty-Second Street Milwaukee 10, Wisconsin

THE DIVIDENDS OF A-P DEPENDABILITY ACCUMULATE TO YOUR PROFIT





• You'll speed up shipments and get loaded cars rolling sooner...
with SKILSAW to saw all bracing lumber. SKILSAW goes right to the car... saves steps... saves material handling... and pre-cuts braces to any length or width as fast as they can be nailed in place!

In shipping rooms, too, SKILSAW puts crating jobs on a production-line basis... sizes lumber quickly and

accurately for faster assembly. And SKILSAW speeds uncrating in receiving rooms... protects contents from damage in opening... salvages crating lumber for other uses. Ask your distributor to demonstrate SKILSAW on your sawing jobs today!



SKILSAW, INC. 5029 Elston Ave., Chicago 30, III. Sales and Service Branches in All Principal Cities



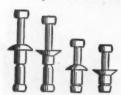


The Cherry Rivet is a mechanical blind rivet made of aluminum alloy. It is applied by one man using a power or hand-operated gun. No bucking bar is required.

Its positive mechanical action gives it high shear and fatigue values which have been proved under the severe vibration and stress conditions encountered in combat aircraft.

There are undoubtedly many places in your business where Cherry Blind Rivets can be used to speed production and reduce manufacturing costs. Before

completing your plans for any new products or manufacturing methods, investigate this new but proved way of riveting.



From left to right...the self-plugging type with brazier and countersunk heads...the hollow type with both styles of heads.

WRITE FOR HANDBOOK. Get the complete story on Cherry Rivets in Handbook A-43. Address Dept. A-118, Cherry Rivet Company, 231 Winston Street, Los Angeles 13, Calif.



Cherry Rivets, their manufacture and application are covered by U. S. patents issued and pending



## Replacement Furnaces in 1944

(Continued from page 41)

#### IDAHO

No. I	Total Furnaces Installed	19,564
No. 2	% of National Total	.28%
No. 3	Allotment of 200,000 Quota	560

Counties	No. 4 Total Furnaces Installed	No. 5 % of State Total	No. 6 Allotment of State Quota (No. Furnaces)
Ada	. 3,606	18.43	104
Adams	. 13	.07	
Bannock	. 2.340	11.96	67
Bear Lake		.99	6
Benewah	400	.64	4
Bingham		3.33	19
Blaine		.22	1
Boise		.01	
Bonner		1.15	6
Bonneville		6.99	40
Boundary		1.26	. 7
Butte		.10	i
Camas		.01	
		10.87	61
Canyon		.30	2
Caribou		1.30	7
Cassia		.06	
Clark	0.4		2
Clearwater		.41	
Custer	444	.07	**
Elmore		.56	3
Franklin		1.31	7
Fremont		.89	5
Gem		.61	3
Gooding		.79	4
Idaho		.62	3
Jefferson		.75	4
Jerome		1.39	8
Kootenai	. 1,013	5.18	30
Latah	. 675	3.45	19
Lemhi	. 73	.37	2
Lewis		.26	1
Lincoln	. 85	.43	2
Madison		1.16	6
Minidoka	. 33	.17	1
Nez Perce	. 1.162	5.94	33
Oneida		.65	4
Owyhee		.17	1
Payette		1.50	8
Power		.44	2
Shoshone		3.14	18
Teton		.19	1
Twin Falls		10.29	59
Valley		.27	2
Washington		1.30	7
	. 200	4.00	

## Asbestos-Cement Duct Construction

(Continued from page 58)

The final result was more man hours per square foot of duct erected and a cost about fifty per cent greater per finished section than on metal ducts.

So far as required amount of metal is concerned which, after all, is the reason for this construction, records show that per square foot of duct area this combination of asbestos-cement panels in metal framing required only 20 per cent metal by area for ducts having for one side the partition wall and only 15 per cent metal by area where the duct has three asbestos-cement sides. These percentages are for a duct of the size shown in the drawing and would be less on a larger duct since the same framing was used, and more on smaller ducts for the same reason. The percentages do not include bolts used.

In time of war and in time of peace

# Wagner meets the need for DEPENDABLE MOTORS

THE precision-building skill and experience gained by Wagner in more than half a century of producing dependable motors is reflected in the reliable performance of thousands of Wagner motors now in use in airconditioning equipment.

Today, our country and our allies need motors to do jobs on air-conditioning equipment on combat vessels and troopships, in factories, in army cantonments... Wagner is all-out to meet this emergency and is furnishing motors wherever they are needed.

If the equipment you manufacture or install is motor driven and essential to war production or to the armed forces—consult the nearest of Wagner's 29 branch offices, located in principal cities and manned by trained field engineers.

M43-22



Polyphase Squirrel-Cage Motors 1/6 to 400-hp.









SEND FOR COPIES
OF BULLETINS MU-182 & MU-183

**BUY U.S. WAR BONDS & STAMPS** 

Wagner Electric Corporation

6371 Plymouth Avenue, St. Louis, 14, Mo., U.S.A.
ELECTRICAL AND AUTOMOTIVE PRODUCTS



#### **2 ADVERTISE**

Tell your market about the fuel saving products you have. Field provides mats for newspaper advertising. Use them to increase sales.

#### 3 SELL

This means telling your market how and why and at what small cost a Field Control will cut their fuel consumption. Practically every heating plant — large or small needs a Field Draft Control.

## FIELD DRAFT CONTROLS SAVE 5% TO 25% OF FUEL



By controlling natural draft, the Field Control cuts fuel consumption 5% to 25%1 The units shown cover installations ranging from space heaters to large industrial boilers — coal or oil. The domestic units require as little as 30 minutes to install. The market is enormous.



#### Association Activities

#### Detroit

The Detroit Association of Warm Air Heating and Air Conditioning Contractors held a meeting of the Board of Directors at the home of Raymond Zick, in Dearborn, recently.

Present were Bob Clark, Jay Biddle, Jim Vanassche, Steve Horvat, Otto Schultz, Jerry Beecraft, Marshall Vanassche and Dewey Cain.

After the business meeting, Mrs. Zick served a buffet luncheon.

#### St. Louis

The Associated Sheet Metal, Warm Air Conditioning Contractors' Association of St. Louis, Inc., held their first fall meeting on September 13.

Ben Kolbenschlag reported on the organization of the new Sheet Metal Contractors' National Association, of which he is second vice president. It was decided to consider amending the by-laws to make each member of the St. Louis Association automatically a member of the national.

The St. Louis group is seeking new members.

#### Florida

The Florida Roofer of October 15, published by The Roofing & Sheet Metal Contractors Association of Florida, carried the following information:

UNEMPLOYMENT COMPENSATION: In the State of North Carolina at the last of August there were fewer than 800 claimants drawing checks for unemployment although more than one million workers have established wage credits. The fund balance of almost \$65,000,000 brought in more interest during the first six months than was paid out. The interest received was \$876,071.49 and benefit payments were \$523,185.45. The fund balance represents about \$65 for each person who has established a wage credit.

The 1943 Florida State Legislature made changes in the Florida Unemployment Law in order to build up the reserve so that the fund which now amounts to about \$23,000,000 will be equal to \$65 for each eligible worker. At the present time Florida employers may be paying to the state fund 1.2, 1.7, 2.2 or 2.7 per cent depending upon past employment experience. In the event that the total amount of money in the Unemployment Compensation Trust Fund does not exceed \$22,000,000 as of December 31 of any calendar year all reduced rates will be suspended and every employer required to contribute at the standard rate of 2.7 per cent per year for the ensuing year, unless such \$22,000,000 equals or exceeds the per capita reserve of \$65 per covered worker.

Beginning with the report which must be filed this month for the quarter ending September 30th, if any employer has paid out in wages during 1943 twice as much as was paid out in 1939 than for the portion which exceeds twice the 1939 wages the employer must pay at the standard rate of 2.7 per cent.

Changes made in penalties for an individual who is disqualified from receiving benefits for voluntary quitting work without good cause or for being discharged for misconduct in connection with his work will result in a conservation of funds.

SHEET METAL CONTRACTORS' NATIONAL ASSOCIATION, INC.: S. E. Giffen, of Giffen Roofing Co. of Coral Gables has suggested that the dues of the Florida Association be increased to \$10.00 and that \$5.00 of that amount be remitted to the National Association. This change cannot be made before the next annual convention.

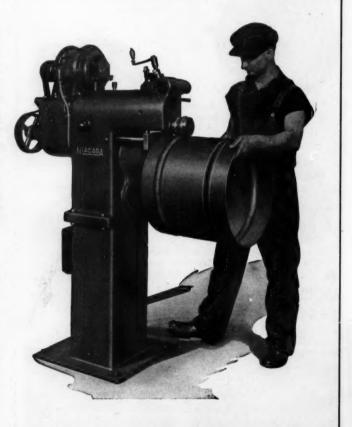
This motor driven combination machine with interchangeable rolls combines power operation, ability to handle heavy gage work, and easy operation.

Foot control of clutch and upper roll allows the use of both hands for holding and guiding the work.

Interchangeable rolls make one machine capable of burring, turning, wiring, beading, crimping, flanging, slitting and circle cutting. Beading and crimping can be done in one operation.

Gears and shafts are enclosed. Gear box contains intermediate gears and clutch, all running in oil. Clutch gives instant hand and foot control and can be locked for continuous operation.

Write for Bulletin 75A. NIAGARA MA-CHINE & TOOL WORKS, Buffalo, N. Y. District Offices: Detroit, Cleveland, New York.



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## Your Production Is in Danger

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Shivering employees in cold, drafty rooms cannot work at top speed and accuracy. Install a Directherm Unit Heater. It will keep your plant warm-EVENLY warm-and the morale up. Absentee sickness costs many times more than a Directherm.

It Is Not too Late for This Winter If You Order Immediately



#### ECTHE HEAT

Made in six sizes (300,000—1,700,000 BTU). For coal, gas, and oil. No pipe or duct work. Easy installation. Automatic controls. No maintenance.

RTHE

MANUFACTURING COMPANY

706 S. SPRING AVE.

ST. LOUIS 10, MO.

## INDEPENDENT "Fabrikated" DIRECTED AIR FLOW GRILLES with Deflecting Vanes \_ mandandandandanda No. 321A **Gives Compound Direction** to Air Flows with Certainty Each grille bar can be adjusted individually to direct air flow to the right, left or fanwise as illustrated. Adjustment can be made either before or after installing. Grille bars remain firmly in position without locking, and will not vibrate nor rattle. փուփուփուփոլ-EVERY GRILLE BAR IS INDIVIDUALLY ADJUSTED REAR VIEW Horizontal deflecting vanes in back may be individually adjusted to give upward or downward deflec-tion to air flow. Send for Catalog No. 41-AC THE INDEPENDENT

REGISTER CO.

3747 E. 93rd STREET . CLEVELAND, OHIO

# AIR CONTROL REGISTERS & GRILLES

A COMPLETE LINE OF OUTSTANDING REGISTERS & GRILLES



FORCED AIR REGISTERS—Dual control registers that assure perfect air distribution by both vertical and horizontal control of the air stream. Ideal performance at a moderate price.

GRAVITY REGISTERS — Styled and designed for the most modern home, yet equally effective for remodeling or defense housing.

FLOOR REGISTERS — Sturdy grid type construction insuring long life and durability at low cost.

Stocks available at our plant and at your nearest Air Control jobber

AIR CONTROL PRODUCTS, Inc.

COOPERSVILLE, MICHIGAN

The by-laws of the new organization have been published in Sheet Metal Worker, American Artisan and in Snips. Membership blanks have been mailed by Clarence J. Meyer, National Secretary, to many Florida shops. According to the latest report received nearly one hundred contractors and associate members have joined the National Association.

Members of the Florida Association wishing to become affiliated with the National Association may send their membership fee directly to Clarence J. Meyer, National Secretary, 567-69 Genessee Street, Buffalo 4. N. Y.

L. A. BURGESS, Sec'y-Treas.

#### **Coming Conventions**

1943

Dec. 8-9—National Warm Air Heating & Air Conditioning Assn., 30th Annual. Netherlands Plaza, Cincinnati. Geo. Boeddener, Man. Dir., 145 Public Square, Cleveland 14.

1944

- Feb. 1 Sheet Metal and Warm Air Htg. Contr. Assn. of Indiana. Joint Meeting with Indiana Furmets. Hotel Antlers, Indianapolis. Frank G. Sink, Pres., 621 E. Ohio St., Indianapolis.
- Feb. 7-8—Sheet Metal Contractors Association of Wisconsin, Inc., 30th Annual. Hotel Schroeder, Paul L. Biersach, Secretary, 225 E. Michigan St., Milwaukee.
- Mar. 7-9—Michigan Sheet Metal, Roofing, Heating & Air Conditioning Contractors. N. J. Biddle, Secretary, 7310 Woodward Ave., Detroit 2.

## Sheet Metal Distributors Semi-Annual

(Continued from Page 68)

are plenty of nails and tin plate being produced, but it is questionable if the jobber will get much of the tin plate supply for civilian uses. Using 1940 as a base period, galvanized sheets in 1940 were absorbed by jobbers to the extent of 46 per cent of total production; now jobbers are only getting 35 per cent of total production and the production is down to 25,000 tons per month as compared to 60,000 tons per month in 1940 to jobbers.

#### Jobbers Under M-21-b-2

Iron and Steel Branch has listed some 22,700 steel jobbers under Order M-21-b-2 and, as described in AMERICAN ARTISAN, these jobbers are allocated a certain amount of steel for their base supply, providing the distributor will accept this quantity of steel. There is nothing new to report on M-21-b-2.

#### **Post-War Construction**

Irving Clark, Vice Chairman, postwar Planning Program for the Producers' Council, used the figure of one million four hundred thousand new homes per year for ten years following the war, but also pointed out that the repair market on existing homes after the war would quite reasonably be 25 to 50 per cent higher in dollar volume than the new building market, and that new commercial construction postwar, might be 50 per cent greater than the new residential construction.

Indicative of the money available for new home

## Power Heaters

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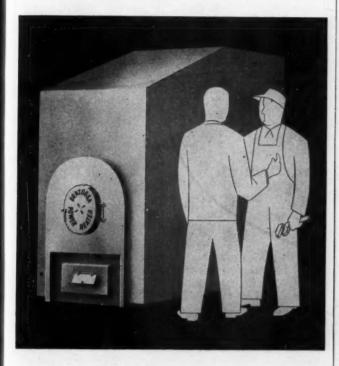
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FROM 300,000 to 2,800,000 B.T.U'S PER UNIT

- -TODAY THEY'RE WORKING FOR UNCLE SAM
- · TOMORROW THEY'LL MEAN PROFITS FOR YOU



Bertossa Power Heaters are today working overtime heating army camps, navy bases, hospitals, utility buildings, etc., for United Nations forces all over the world. And here at home they are being specified by heating engineers and architects for homes, churches and industrial buildings.

This popularity is due to (1) compactness of complete blower and heating unit; (2) down draft flue for increased efficiency; (3) 90% direct heating surface and (4) adaptability for complete air conditioning.

From every standpoint the Bertossa has proven its effectiveness on the job—and likewise its profit opportunities to live-wire dealers.

Bertossa

JACKSON & CHURCH COMPANY, SAGINAW, MICHIGAN

# Check 10 Sivilia HERE'S HOW!

Weep in close telephone or personal contact with the homes in your community . . . remind them that at the first sign of furnace trouble they should call on you. Warn them against "letting things go." Tell them to report any instance of inefficiency to you.

Answer service calls as promptly as possible. Remember, your job is one of the most important of all in the war effort. Keeping America warm means keeping America healthy. Keeping furnaces efficient means saving much needed fuel.

Call on Northwestern Stove Repair Co. for all repair parts. Remember, Northwestern quality and Northwestern service are your best bets for filling customer requirements now. Northwestern is first with so many heating dealers because heating men know Northwestern dependability.

#### NORTHWESTERN STOVE REPAIR CO.

Manufacturers of Stove, Furnace and Boiler Repair Parts

662 West Roosevelt Road - Chicago (7), III.

Cut Any Shape
 Cut Any Size Sheet
 Sizes from 18 Gauge to ½"



## Speed Up PRODUCTION

Here's just the Shear that offers every feature you want. It does hundreds of odd shearing jobs better and faster—yet is an inexpensive hand operated tool. Send at once for Shear Bulletin. It gives all details of the Marshalltown line of sizes from 18 gauge to 1/2 inch capacity.

## MARSHALLTOWN THROATLESS SHEARS! MARSHALLTOWN MFG. COMPANY

920 Nevada Street, Marshalltown, Iowa

QUIET
Our Famous GEROTOR
pump — working an
Uncle Sam's side today
... on your side after
Victory ... May Oil
Burner Corporation,
Baltimore, Maryland.

GEROTOR
fighting
on the war front
Serving
on the home front!

GEROTOR AAY DIVISION
On the home front!

construction, was Mr. Clark's figure that there were 12.9 billions of dollars of new savings in 1941; 26 billions of dollars in 1942; and quite possibly 42 billions of dollars of new savings in 1943. Surveys have indicated that home owners intend to spend a very large percentage of these saved dollars for new house construction or home improvement postwar.

Mr. Clark suggested that a great deal of the publicity now being released covering new products or new types of buildings for postwar construction be drastically discounted because immediately after the war builders plan to offer 1942 model homes and home owners may be disappointed to find this type of house offered instead of the very romantic, modernistic structure shown in advertisements and articles. It may be several years before actual construction will catch up with the current advertising. Many of these postwar houses and materials have definite limitations as to availability of material, characteristics of the materials under weathering, cost of manufacture and use on the site, and other difficulties.

## Heat Controls For Conservation

(Continued from page 42)

that the smaller plants have the facilities to do the job. They are regarded as able to produce heat control items concurrently with war material if they are engaged in war work. Army and Navy strenuously fought the program in its various stages, and tried to stop it entirely in the hearing before the Program Adjustment Committee. Apparently the opposition before the Committee was much deflated when the Army and Navy representatives, belittling heat control systems as an unnecessary gadget luxury, were compelled to admit that they did not know that large numbers of these "gadgets" were that large numbers of these "gadgets" were used by Army and Navy in their hospitals, institutional buildings and in posts, and in dwellings in various stations and centers. It is anticipated the armed services will make further efforts to block the use of materials, men and facilities in manufacturing these items, but the sustained need of conserving fuel is expected to be far more convincing with the Program Adjustment Committee.

#### **Program Under Way by Spring**

The belief is that the largest supply of installations, which may be made available most immediately, will be ready for next Spring. Manufacturers have told the Washington people they can produce items sixty days after they receive the materials. Allocation of materials for the first quarter undoubtedly will not be in the quantities ultimately needed. But whatever quantity of materials is made available will enable the manufacturers to provide a better supply of equipment for use in Spring. The general thought is that the momentum of the plan will enable the OCR to pry more liberal allocations from the Committee during later quarters next year; and that the mechanical appliances for fuel conservation will be available in larger quantities for use next Fall and Winter.

It is the hope of Government people such as Chief Raymond Kerr, and Assistant Chief Dr. Walter H. Beidatsch, of the Division of Fuel Conservation, OCR,

### Winter won't cramp your style



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er, 1943

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· Saves fuel for owner.

Saves metal for war production.

#### STOVE AND FURNACE LINING

Mrs. Finicky is in a mess. The firepot in her furnace cracked wide open on the very day winter struck the old homestead. Coal gas streams from the registers . . . threatens to choke her as she phones you for help. And, as always, she doesn't want to be without heat while you're saving her life.

That used to be a tough one. But furnace men who are on speaking terms with Fireline know the answer: Just tell her to kill the fire tonight, and in a few hours tomorrow morning you can have the firepot lined with Fireline and a new fire started in a furnace that will work right and won't leak.

The point is that Fireline enables you to put a cracked firepot back into action in a fraction of the time required to dismantle a furnace and replace castings the old way. So the Fireline way is a right-through-the-winter way. Ouick handling of the job also means greater profit in proportion to the labor and material involved.

Fireline does its job right, too. Seals all cracks and holes; provides a durable lining that assures a bright, hot, fuel-saving fire. It not only takes care of the burned-out firepots; it also can be sold to preserve firepots that are still in good condition. For steel furnaces it can be moulded to any shape -solves the problem of getting special refractory tile. Keep a drum of Fireline on your truck so you can get this profitable winter-long business. Your jobber has Fireline in stock. No priorities or permits needed.

#### FIRELINE STOVE & FURNACE LINING CO.

1816 Kingsbury St. (Dept. K), Chicago 14, III.



AMERICAN ARTISAN, November, 1943

## A REAL Jime Saver



## The No. 4B PUNCH

This punch is accepted by leading contractors and dealers as a real time-saver in the shop and on the job. Men who use it every day know it can't be beat for clean, fast punching. Has a capacity of 1/4" through 16 ga., weight 3 pounds. 81/2" in length, depth of throat, 2". Complete tool includes three punches and three dies of specified sizes with die adjusting key.



"We Do a Nice Volume Now - Thanks

to CLARAGE EQUIPMENT

War plants, army barracks and other vital war-time buildings need heating and ventilating, or exhaust and blow pipe installations. This high priority business can be your salvation. Specify Clarage Fans, Blowers, Unit Heaters! Nationally known and Nationally accepted, these highest quality air-handling products help you land the

desirable jobs. Write today for descriptive



EXHAUST FANS



VENTILATING FANS



that the trade will help in arousing awareness of the need for the instalments in areas such as Maine and other localities where the cold weather continues longer, and where fuel must be brought in by relatively expensive outlay of transportation facilities. Transportation facilities now are getting almost as scarce as other services affected by the war.

#### 3-Wire Cable by Directive

The question raised about the difficulty in obtaining the copper wire for the three-wire cable which runs from the thermostat to the damper motor and the fuse box, is not regarded here as troublesome. It is felt that CMP Regulation 9 is part of the solution. It is also suggested that people frequently read into Government Orders meanings that are not there, and that it will be feasible for manufacturers and others to obtain copper wire by means of the directive which enables retailers, wholesalers, manufacturers and others to provide copper wire for repairs and replacements as well as for analogous purposes.

#### To Be Sold Without Rating

Apparently the claimant agency will be able to secure some of the orders and directives in a manner that will make the supply of the materials easier for those who manufacture heat control systems when the appliances are used to save fuel. Critical materials finally allocated for the purpose are expected to screen through CMP-4b to the manufacturers. The manufactured item will not be channeled beyond the manufacturer under any rating control. In other words, P-84 will not be expected to apply. The object is to make distribution and availability of heat control

#### The ANSWER to MANPOWER SHORTAGES!!



Send for this CATALOG Showing the Complete LOCKFORMER LINE

One man and a Lockformer can make more Pittsburgh Locks than 16 men working at 8 brakes.

Isn't this something to think about-NOW?



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appliances as easy as possible in order that they may reach those who use them for fuel conservation as quickly as possible. Whatever Order or Directive is issued by the Plumbing and Heating Division is expected to be formulated in keeping with this purpose.

#### Men to Handle Program

The immediate administration of the distribution of the various items will come under the Plumbing and Heating Division of WPB. Under the general supervision of Director Joseph F. Wilber, and Deputy Director William C. MacDonald, the actual job will be handled by Lawton R. Moray, head of the section which includes heat controls. Manufacturers and distributors may find Mr. Moray at 623 Steuart Building, in Washington, D. C., and they can phone him at Republic 7500, Extension 75898. However, if you phone, it will be wise to ask Central to confirm the Extension number because these branches are frequently changed.

It is understood the Plumbing and Heating people, as well as OCR Fuel Conservator Kerr, and Messrs. Saunders and Muirhead of OCR Durable Goods Division, are familiar with the English program, along similar lines, which has been very successful in conserving fuel. It is estimated the program, as approved by Mr. Whiteside, will require considerably more than the 1,000 tons of carbon steel already approved by the Program Adjustment Committee. At least 600 tons additional are to be requested for the first quarter of next year. It is anticipated it will be easier to secure the metal as the production develops.

The purpose is to save at least 600,000 to 1,000,000 tons of coal. Each ton of coal is said to be equivalent to four barrels of oil, but no figures are yet available

## "FABRICATING METHODS"

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METHODS

"HOW TO MAKE DUCTS FROM NON-METALLIC MATERIALS"

> Is Yours for the Asking

It has been proven, and we are of the firm opinion that the methods used in "FAB-RICATING METHODS"

make the best ducts possible and at the same time at the very lowest cost. This eight-page booklet describes the latest improved methods of fabricating flexible or rigid non-metallic boards.

Write today for this illustrated informative booklet.



Manufacturers of Sheetlock Self-Fastening Metal Strip 4521 North Clark Street Chicago, Illinois

### COMPLETE STOCK



VICTORY



on proper priority Replacement parts for all models of Wayne burners are always available.

WAYNE VICTORY HEATING

#### MANUALS

are FREE to all oil burner dealers for distri-bution to their customers.

#### HELP SAVE FUEL

Order your supply of these manuals NOW. Use your letterhead to give us copy for your imprint.

**Wayne Oil Burner Company** 9111 Glasgow Ave., Fort Wayne 4, Indiana

#### WAYNES V-DAY LINE COMPLETE

OIL-FIRED, GAS-FIRED, COAL-FIRED FUR-NACES, STOKERS, BOILERS, WATER HEATERS. CONVERSION BURNERS FOR OIL AND GAS.

LINE UP WITH WAYNE FOR POST WAR PROFITS



## lanette Blower Wheels

Janette steel wheels have been on the market for 18 years and manufacturers of oil burners, coal stokers, blowers, generators, superchargers, dust collectors, hair dryers, gasoline engines, heating and ventilating equipment have used them engines, nearing and ventilating equipment have used them with excellent results, which are possible because of their patented construction. The steel blades are cut in pairs, pressed thru slots in the heavy back plate, then welded. The tips of the blades are pressed thru slots in the inlet disc, then bent over against the inherent spring of the blades. This prevents loose blades and results in an exceptionally rigid wheel. May we send information?



Janette Manufacturing Co. . 556-558 W. Monroe St. Chicago, Ill.





**NEWARK, OHIO** 

5649 Fillmore St., Chicago 44, III. and 114 Liberty St., New York 6, N. Y.

concerning the quantity of oil it is hoped may be saved. Officials here are convinced the heat control installations, in terms of critical metals, represent a great economy in fuel. In other words, they think the metals and other critical materials required, in the quantities they are required, are worth far less to the war than the coal, oil, gas, wood, and any other fuel that may be saved for direct use in the influence upon the war.

#### **Too Much Caution Over Materials**

It appears to be the informed opinion that the metals needed are far more plentiful, in the proportion they will be required, than those who rule upon their disposition in Government are yet aware. One thoughtful and observing official explains that, even in circles where allocations are determined, there is still a natural caution that is bred of the mass consciousness of shortages. We apparently have become so accustomed to thinking in terms of shortages that even in the higher reaches of Government they cannot believe that the supplies are more plentiful despite the fact that such is actually the situation. One official suggests that some people in Government, who have indoctrinated the public with the thought of scarcity, have actually been convinced themselves by the reaction from the masses in terms of the doctrine the Government people themselves originally promulgated.

The general plan to achieve the relaxation of this condition is to make it easier for the people in charge of allocation to become aware of the growing supply of some materials, and at the same time gradually to secure an expanding volume of needed materials for the production of heat controls. It is expected

## KEEP 'EM FIRING with Gar Wood

- Self-Contained Forced Warm Air Automatic Oil-Fired Heating Units, (from 50,000 to 500,000 B.T.U./Hr.)
- ★ Industrial Space Heaters up to 500,000 B.T.U./Hr.
- Boiler-Burner Units up to 25 HP.

Some Distributors and Dealers are receiving Government business for Heating Equipment. If you are one of those who are called upon to submit estimates, heating plans and surveys, we suggest you enlist our cooperation and our engineering service.

Write today for "ENGINEERING STANDARDS"—this valuable 72-page book on Engineering, Installation and Operation of Heating Systems, sent free on request to Sheet Metal Contractors and Dealers, Engineers and Architects. This offer made for a limited time only.

Address reply to Dept. 14

HEATING DIVISION

GAR WOOD INDUSTRIES, INC., DETROIT

Protect Freedom-Buy War Bonds

the line of least resistance will be to facilitate the production of commercial items, standard lines, those least intricate, requiring the least of the materials that still are really scarce. The thought seems to be that, as this kind of production takes hold, mass consciousness of scarcity will fade, and it will become apparent that materials now scarce also gradually will become more plentiful; and it will be practicable to tackle the manufacture of the more intricate and complicated items that are required.

If this program unfolds as it is envisioned, valve manufacturers, and those who make similarly complicated items will find themselves in the stream of production for civilians, and the whole program may be well on its way in its entirety by next Spring, even though the European war does not come to an end

early next year.

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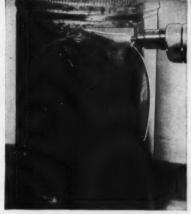
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Obviously, the unknown quantity is manpower. Apparently authentic reports here are so conflicting that it is impossible at this time to determine whether or not we have abundant manpower misapplied or unemployed, or whether it will be necessary to shift large sections of workers from one industry to another or from one area to another. Conservation of fuel is an urgent war measure; and the workers on machinery to save fuel might be regarded as so essential that they may be classified in the supercritical labor classification of selective service. Moreover, they apparently think here that production of heat control items will in large measure occur in war labor areas, and in plants, large or small, already regarded as war material manufacturers. This would seem to indicate it would not be necessary to import workers, but to justify the use of workers already in the area who might have to be taken by manufacturers of heat control items from other war work.



## QUICK CUTTING



New ROYAL CLIPPER METAL CUTTER

Saves Time Speeds the Job

SPEED your metal cutting work with the new Royal Clipper. It cuts most sheet metals up to .040" in any pattern you desire - cleanly, quickly. Can be used as a scroll shear or

for straight cutting. Order

direct or through your jobber. Only \$15.95. Send for free "BULLETIN B" illustrating

handy tools for sheet metal workers.

Cuts most sheet metals up to .040" with ease.

Leaves a smooth, workable edge—no grinding or filing.

Removes less than 1/8".

Fits the chuck of any 1/4" pneumatic or electric drill.

Operates at twice drill speed.

Small and compact—weighs only 11/4 lbs.

C-B TOOL COMPANY . Lancaster, Pa.

#### HOW TO SPOT WELD



## 75% IN WELDING TIME

Instead of welding 4 individual spots on this welded Job the older way, Harris Products Co., Cleveland manufacturers of vibration insulators, installed a special projection welding die, making it possible to speed production by 4 times the fermer rate. Perhaps you, too, can profit by adapting projection welding techniques to your work and by using the improved Medel J Spot and Projection Weldington of the projection welding techniques to your work and by using the improved Medel J Spot and Projection Weldington of the projection welding the proj

MULTIPLE SPOT WELDING sketched above on a Muffler Shock Insulator Assembly, made possible a welding rate 4 times greater than could have been reached by Individual welds. A special die, designed to weld points 1, 2, 3, and 4 (above) at one contact made this possible. The older way would have been to weld point 1, turn the piece, weld point 2, turn the piece again, etc.

#### PROJECTION WELDING

ON UNIVERSAL WELDING
ON UNIVERSAL WELDINGS
is a mere efficient way to mest schedules.
You get mere uniform welds from these
rugged, simply constructed welders. Use
current economically, "Green help" preduces uniformly good welds on the Model J
Spot Welder.

## Send Coupon Today



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UNIVERSAL POWER CORP., 4898 Euclid Ave. Cleveland 3, Ohio. Please send complete story on your Spot and Pro-jection Welders and accessories and how they can help me.

NAME ..... ADDRESS .....

CITY..... STATE.....



Chisels, punches, drills, nippers and numerous other hand tools . . . quality built for long service. Sold by leading jobbers.

DAMASCUS STEEL PRODUCTS CORP., ROCKFORD, ILL.

### **ACCURATE** DEPENDABLE



## HEAT REGULATOR

TYPE A-23 positive snap action regulator operates on a differential of only 1/2 degree.

WHITE MFG. CO., 2368 University Ave., St. Paul, Minn.

MASTER" "METAL



Compound Action AVIATION SNIPS

Used extensively by leading aviation and metal working industries, and in U. 5. Government Plants throughout the country.

- Cuts circles, squares and irregular patterns on Stainless, Dural, and Monel Metals with ease.
- All Parts interchangeable.

  MI for cutting left—M2 for cutting right.

  MISS BULLDOG AND STANDARD PATTERN SNIPS are used in Shipyards, on Government construction projects, and on maintenance work wherever sheet metal is required.

  Send for literature of complete line

J. WISS & SONS CO.

ESTABLISHED 1848

NEWARK, N. J.

.. Has The RIGHT SOLDERING FLUX

For Every Sheet-Metal Job! Let Us Help You With Your Problems

L. B. ALLEN CO., Inc. 6702 Bryn Mawr Ave., Chicago, 31, III.

#### N. W. A. H. & A. C. History

(Continued from page 65)

ficient chairman, that it was accepted with little criti-

Thus, 1932 was one of the Association's most progressive years and the membership was encouraged by the feeling that no industry had a more promising future.

In December, 1932, according to the Association's custom after two years service, I. L. Jones retired as president and William L. McGrath, of the Williamson Heater Company, Cincinnati, succeeded Mr. Jones.

#### **Cunningham Joins Meyer Furnace**

The Meyer Furnace Company, Peoria 2, Illinois, announces that John S. Cunningham has recently entered its service as Factory Manager in charge of production and product design.

Mr. Cunningham, after graduating from the University of Maine, took his Master's degree at the University of Illinois, acting as research assistant for two years, and working under the direction of Professors Kratz and Konzo in their experimental and test work on warm-air furnaces, sponsored by the National Warm Air Heating and Air Conditioning Association. For the past eight years he has been associated with two manufacturers of warm-air furnaces in engineering and more recently in production work.

Under his guidance The Meyer Furnace Company is developing new lines of coal-, gas- and oil-burning gravity and forced-air furnaces, embodying the latest principles of combustion and heat transfer that have been developed during the war.

## THE NAME BLAST

#### FOR A COMPLETE LINE OF GAS AND OIL-FIRED FLOOR FURNACES

While we're in war work now, our FLOOR FURNACES may be available sooner than you expect.

Write for details and literature to

COLE HOT BLAST MANUFACTURING CO. 3108 W. 51st St., Chicago 32, III.

#### FOUR BLOWS ON A PRICK PUNCH installs the BADGER DAMPER REGULATOR CONTROL



A punch and a hammer are the only tools needed to make a quick, solid, secure damper fitting—with the BADGER damper regulator control. No bolts, rivets, holes to bother with

Your apprentice labor can install the Badger, saving you valuable time and money on every damper job. Buy BADGER through your favorite jobber, or write direct for samples and LOW PRICES.

BADGER MFG. & SALES COMPANY Mfrs. of BADGER Humidifiers, and PERMANENT Filters for Heating, Ven327 E. Brown St. • Milwaukee 12, Wis. tilating, Aircraft and Industrial Use

#### Amendments, Interpretations

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ber, 1943

(Continued from page 63)

users are not eligible for an oil ration this year if, by September 24, substantial work had been done to alter their equipment or if by that time conversion of the equipment had already been completed."

Over-all suspension of the conversion program was further reflected in an announcement last week by the Petroleum Administration for War of the discontinuance of its program for the conversion of industrial oil burning equipment to the use of coal.

#### Allotment Number Identification

HE distinction between the use of allotment numbers for identification purposes by Class A and Class B product manufacturers has been clarified through the issuance of Interpretation 19 CMP Regulation 1, issued by WPB, October 8.

A manufacturer of Class B product ordering production material needed to make the Class B product must use the allotment number identifying his allotment and authorized production schedule in placing orders for such production material. Such manufacturers must not use the allotment numbers appearing on orders placed with them by their customers.

For example, a manufacturer of electric motor controls receives an allotment of controlled materials

You can UP production
...even
with
unskilled
labor

MODEL 1226
36-in. Threal
12-Gauge Capacity

CIRCLE CUTTING
ATTACHMENT
included as
Standard Equipment with this
machine

## Libert HISPEED SHEAR

From almost any material—steel, stainless steel, brass, aluminum, metal screen, fiber, paper products—even an unskilled worker soon learns to cut intricate combinations of circles, angles, and curves, rapidly, accurately, cleanly. A Libert Shear does not nibble. Edges are smooth, need no finishing. Inside cuts are no harder than outside, whether it's flat sheets or formed work. No starting holes are necessary. Write for Bulletin.

Made in sizes up to 60-in. throat, 10-gauge capacity

LIBERT MACHINE COMPANY
Green Bay, Wisconsin

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Requirements

Schwitzer-Cummins Company



\* BLOWERS

FOR EVERY PURPOSE

Double Inlet and Single Inlet

HY-DUTY Blowers, 9¾" to 25" • Top and Bottom Horizontal, and Top and Bottom Vertical Discharge • Top and Bottom

Discharge • Top and Bottom Motor Mounting • Dual Units also available.

★ CENTER DISC WHEEL—Double Inlet, Double Width • Reinforced Center Disc • Designed for Modern Air Conditioning and Heating Applications • Sizes, 4½" to 50".



★ ENGINEERING DATA—Write for Catalogues showing complete Performance Data • Experienced Engineering Department available to help solve your Air Handling Problems.

BLOWER DIVISION

SCHWITZER-CUMMINS COMPANY

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The New Improved
VITROLINER FLUE
is NOW LISTED by



for All Types of Fuel
Coal, Oil or Gas
FOR WAR HOUSING

Vitroliner now fully meets the new and revised GOVERNMENT SPECIFICATIONS for suspended chimneys

VITROLINER is dependable, easily assembled in less than one hour, demountable if desired, has long life and gives double the draft of a masonry chimney of the same height and cross section area.

Write today for further information and for Folder!

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PHONE CALUMET 436

#### REPAIR PARTS

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STOVES-FURNACES-BOILERS

Also MODERN AIRE FURNACES

Fittings, Registers, Supplies

#### DES MOINES STOVE REPAIR CO.

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DES MOINES, IOWA

Since 1869



### SAVE ON MALLET COSTS with the DENSEWOOD

Here's a mallet that lasts longer under hard use, does better work—at less cost. It's the DENSE-WOOD, made of "condensed" wood, tough, yet resilient, non-splitting, and MANY TIMES stronger than ordinary wood. You'll call it your favorite tool on all sheet metal work. Precision-balanced "lockwedge" handle never loosens. All sizes and types.

Save money! Put DENSEWOOD on YOUR job. Write for details and prices.

DENSEWOOD CORPORATION
ELKHORN, WISCONSIN

identified by the allotment number J-3 from the War Production Board, together with a preference rating. When he orders production material to make electric motor controls, he will use the symbol J-3 on his orders. Orders for electric motor controls placed with him by his customer will bear allotment numbers such as B-4, W-3, G-6, U-1, and others. The electric motor control manufacturer may not use those allotment numbers in placing orders for the production material for the manufacture of the controls.

Manufacturers of Class A products, however, receive allotments from their customers, rather than from WPB, and therefore use the allotment numbers appearing on such customers' orders when they order production material needed to make Class A products. For example, a manufacturer of a Class A product who receives an order from a customer and an allotment of controlled materials identified by the allotment number 0-5, will use the same allotment number 0-5 in placing his orders for production materials needed to manufacture the Class A product. If he receives an order for his Class A product from a manufacturer of a Class B product with an allotment, identified by the allotment number J-3, he will use this number in placing his orders for production materials.

The interpretation also calls attention to the fact that an allotment number or symbol alone never constitutes an allotment of controlled materials. In making an allotment, a consumer must specify the controlled material and the exact quantity allotted, and under Paragraph (f) of CMP Regulation No. 1 allotments must be made only in the form and shape in which they are allotted to the persons making the allotment.

## Drill Holes Faster, Easier with Black & Decker Electric Drills



Models to fit any metalworking job. Capacities from ¼" to 1¼" in steel—double in hardwood. Drive twist drills, wood augers, hole saws, many attachments. Powerful Universal motors. See your Black & Decker Distributor, or write to: The Black & Decker Mfg. Co., 782 Pennsylvania Avenue., Towson-4, Maryland.

Black & Decker

DRILLS, HOLE SAWS, DRILL STANDS, LECTRO-SHEARS, BENCH GRINDERS, SANDERS, PORTABLE GRINDERS.



## Prompt — Delivery

FURNACE BLOWERS

- Maintain your volume of work by installing furnace blowers, during winter months.
- Packaged Units... Silent—Powerful—Dependable. Standard or celotex insulated units. Complete line of multivane blowers, from 6" to 16" wheels.

GRAND RAPIDS DIE & TOOL CO.

Div. of Expert Die & Stamping Co.

329 Scribner Ave.

Grand Rapids 4, Mich.

#### Elgo/entilating Specialties

#### Adjustable According to Air Velocity

One of the outstanding advantages of the Elgo Automatic Shutter is that it is adjustable for different air velocities. Because of this feature it is adapted to an unusually wide range of applications. Sizes from 10" to 60" square—also rectangular.

Write for circular and prices!



"ELGO" TYPE
AUTOMATIC SHUTTER
Rear View (Closed)

Free CATALOG

ELGO SHUTTER & MANUFACTURING CO. 6966 W. Jefferson Detroit 17, Mich.

#### CHICAGO STEEL BRAKE



BEST BY FORTY-TWO YEARS TEST

DREIS & KRUMP MFG. CO. 7404 LOOMIS BLVD. CHICAGO 36

#### L-41 Amended

HE war production board has announced several substantial changes in its construction limiting order L-41 in connection with a complete redrafting of the order intended to make the restrictions more easily understood by the public.

The most important were listed as follows:

1. The limit on farm construction, including residential, is placed at \$1,000. Previously, there were separate limits, farm residences not being considered part of the farm unit.

2. A limit of \$200 is placed on any type of construction for which a higher specific limit is not authorized by the order. This overall limit formerly was

\$1,000.

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3. The exception, originally made by L-41-B, for the insulation of buildings, has been liberalized in accordance with WPB policy relating to fuel conservation. The exception covering the conversion of heating equipment from oil to coal has been eliminated because of the tight coal situation.

4. Minor capital additions under CMP Reg. 5 in certain of the more essential industrial plants are ex-

cepted from the L-41 restrictions.

5. In calculating costs to determine if a job is within specified L-41 limits, the cost of used materials, or the value of labor furnished free, need no longer be included.

6. Cost limits now refer to the calendar year, instead of to any consecutive 12 months' period.

7. Installation of plumbing equipment rated on WPB-2631 [formerly PD-851] is permitted if the cost is under \$200.



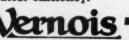
To Help With Your War-Time Soder & Flux Problems WRITE US TODAY

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#### 'EM REPAIRED! KEEP

VERNOIS FURNACES, made of Vernalloy, the toughest cast iron, have exceptional lasting qualities . . . but occasional repairs keep them at peak efficiency. When you repair Vernois Furnaces order your parts direct from Mt. Vernon to assure perfect fit and greatest efficiency.

MT. VERNON FURNACE MFG. CO.



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### SHAFTS of WAR are TURNING

Serving industry wherever the shafts of war production are turning, and even on many machines of war themselves, Randall Bearings are proving what many users have known for years. Proving dependable performance under tough conditions. When peace is won, Randall self-aligning, selflubricating, quiet bearings will be available to all. They're available now subject to priority. Write us now for full information.



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## YEARS

No. 72 SERIES

## POWER SHEAR

36" and 42" sizes 14 and 16 gauge



Quick in action, easy to operate, compact in size! This WHITNEY-JENSEN Power Squaring Shear offers many advantages to sheet metal shops. One outstanding distinctive feature is the simple, accurate, and positive blade adjustment. Another is the high speed of the machine-180 strokes per minute. Write today for a copy of our circular, which gives full description and specifications of the three models available.

WHITNEY METAL TOOL COMPANY 91 FORBES ST. ROCKFORD, ILL.



AUTOMATIC HUMIDIFIER CO. Cedar Falls lowa

#### IT'S STREEKNO TIME ALL THE TIME



MILLIONS of Home Owners are waiting to have their Gravity and Air Conditioning Registers STREEKNOTIZED—Cost only \$2.00 per register to the home owner, easy to sell, easy to install and is permanent.

Show your customers how STREEK-NOTIZED Registers save hun-dreds of dollars in decorating costs and You Make Big Profits, Tool A twelve month a year proposition! Get details from your jobber.

EXCEL HEATING & AIR CONDITIONING CO. 3715-19 Belmont Ave., Chicago 18, III.



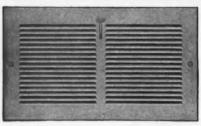
REPAIR PARTS FOR ANY **FURNACES-BOILERS** OR STOVES

Complete Line of Sundries and Supplies

FOR QUICK SHIPMENT

OMAHA STOVE REPAIR WORKS 1206-8 DOUGLAS ST.,

OMAHA 2, NEB. **SINCE 1882** 



Auer is now engaged principally on vital air-craft parts and other wartime products. We are still able to furnish most styles of registers from inventory stocks, for all purposes per-mitted by Federal regulations.

Auer Register Book sent on request.

Airo-Flex 7032 Single Louvre Adjustable Register

THE AUER REGISTER COMPANY, Cleveland, O.

GRILLES . For Air Conditioning and Gravity

Statement of the Ownership, Management, Circulation, Etc., Required by the Acts of Congress of August 24, 1912, and March 3, 1933
Of American Artisan, published monthly at Chicago, Ill., for Oct. 1,

Of American Artisan, published monthly at Chicago, Ill., for Oct. 1, 1943.

State of Illinois, County of Cook—ss.

Before me, a notary public in and for the state and county aforesaid, personally appeared F. P. Keeney, who, having been duly sworn according to law, deposes and says that he is the publisher of the American Artisan, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher—F. P. Keeney, Chicago, Illinois.

Managing Editor—J. D. Wilder, Chicago, Illinois.

Business Manager—Chas. E. Price, Chicago, Illinois.

2. That the owner is (if owned by a corporation, its name and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.

Keeney Publishing Company, 6 North Michigan Avenue, Chicago 2, Illinois.

Stockholders: F. P. Keeney, Chicago, Illinois; W. J. Osborn, Fairfield,

Illinois.

Stockholders: F. P. Keeney, Chicago, Illinois; W. J. Osborn, Fairfield, Conn.; R. Payne Wettstein, Chicago, Illinois; Chas. E. Price, Chicago, Illinois; Robert A. Jack, Cleveland Heights, Ohio.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are (if there are none, so state):

owning or holding 1 per cent or more of total amount of bolius, menowing or holding 1 per cent or more of total amount of bolius, menowing ages, or other securities are (if there are none, so state):

None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders as they appear upon the books of the company but also, in case where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is: (This information is required from daily publications only.)

F. P. Keeney, Publisher.

Sworn to and subscribed before me this 20th day of September, 1943.

Grace E. Waymer.

(My commission expires February 10, 1946.)

(My commission expires February 10, 1946.)



New and improved "EX" Fans are now available in standard sizes from No. 15 to No. 80 and from 200 to 30,000 CFM Capacity with pressures up to 15" W.G. These fans are commonly used for exhaust problems to handle dust, tumes, shavings, etc., but can be adapted for forced draft service.

"EX" Fans are furnished in all standard arrangements of the N.A.F.M. The design is such that it can be easily modified to suit special assemblies, thus "EX" Fans are ideal for resale purposes, as part of factory assembled units.

Write us about your problems. Send for Bulletin No. EX-41

BAYLEY BLOWER COMPANY 1817 South 66th Street

Milwaukee, Wis.

#### A Type And Size For Every Need

For efficiently controlling light and medium dampers in heating, ventilating and air conditioning systems, specify Parker-Kalon Damper Controls. The line includes all types and sizes, at a range of prices to fit the needs of any job. Parker-Kalon Corp., 190-192 Varick Street, New York.



PARKER-KALON damper controls

#### On Our Industry's Front

(Continued from page 44)

penses necessary to closing the loan.

3. The borrower shall state that he has not paid, and that he will not pay, any fee, commission, or bonus for obtaining this loan.

4. The bank shall pay repurchase agreement charge of 1 per cent per annum at the end of each quarterly

period.

5. The bank shall agree to exercise reasonable supervision over the activities of borrower which may affect the loan.

#### **Construction Restrictions Continue**

THE War Production Board has put to an end reports that restrictions on construction were to be relaxed.

The statement of policy, as adopted, follows:

"It shall be the continued policy of the War Production Board to restrict construction of new facilities and to reduce facilities under construction to the minimum necessary for the war program and for essential civilian needs, in order to conserve to the utmost all resources for the production of war supplies and equipment. In accomplishing this result, the Board will in each case seek a minimum consumption of materials and manpower, together with maximum utilization of existing facilities and equipment. The





The new V-Vent ventilating unit has a high rating for exhaust efficiency. It is sturdy, skillfully designed, built of non critical materials. Guaranteed by Dickinson to provide high efficiency at moderate cost. Write for further details.

#### **AEOLUS DICKINSON**

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Chicago 8, III.



# REMEMBER — TO BUY GENUINE REPAIR PARTS for ROUND OAK — Furnaces Stoves and Ranges

ROUND OAK COMPANY

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Michigan



Your work will proceed faster and neater when you use Bremil Portable Shears on the job or in the shop. Write today for literature showing complete line.

ALL-ALLOY No. 2 cuts up to 1/4" steel plate.
ALL-ALLOY No. 1 cuts up to No. 11 gauge strip or sheet.
Special blades may be obtained for shearing stainless steel

BREMIL MFG. CO., ERIE, PA.

#### GRAY'S FULL SIZE BLUEPRINT PATTERNS

6 piece ship ventilator patterns, up to 24" dia.
45 degree branch patterns, from 3" to 24" dia.
Elbow patterns, 2" to 9 piece, up to 40" dia.
Skylight Patterns, putty bar, Hip, Gable, Flat.
Skylight Puttyless, for Hip, Gable, and Flat.
Skylight Turret and louver patterns.
Roof Ventilator and base patterns, up to 36" dia.

Relvoving Ventilator patterns, up to 15".

Write for pattern circular giving full information.

G. L. GRAY

509 Grand Avenue NEW HAVEN, CONN.

#### "ALNOR" VELOMETER

DIRECT READING AIR VELOCITY METER

"Alnor" Velometer fills the need for a simple, accurate means of determining air velocity in air conditioning, forced air exhaust ducts, etc. Peak



efficiency operation is now more important than ever before . . . and Velometer with its many simple attachments assures correct readings, under the most adverse conditions, in feet per minute, right on the scale! These readings enable you to gauge the sysefficiency and MAKE NEC-RY ADJUSTMENTS to asgreatest efficiency. Write wew catalog now!

Illinois Testing Laboratories, Inc.

412 N. Le Salle St., Chicago, Ill.

#### LET'S BE REALISTIC

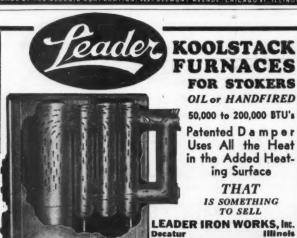
There are a lot of enchanting promises floating around about a fantastic world we will be living in after the war. Fine—it can't come too soon, but it looks like the demands of rehabilitation will determine the course of events after the costly struggle is over.

The order of things during the postwar period will of necessity, call for rigid economy throughout the entire program of living. It is natural to assume that some changes will be made, and then only where a saving can be effected.

The day dream world is very likely to be out of grasp for a little while to come. People as a whole are not so much concerned about fancy frills or novel ways of doing things as they are about getting back some of the basic comforts now denied by war priorities, and among the first of these is automatic heat—assured by the Mercoid time proven way of efficiency, accuracy and trouble-free performance.

#### \*MERCOID CONTROLS\*

FOR HEATING, AIR CONDITIONING, REFRIGERATION, AND VARIOUS INDUSTRIAL APPLICATIONS MADE BY THE MIRCOID CORPORATION. 1221 BILLMON'S AVENUE CHICAGO AT THE MOON







## 公

## WAR TIME

Belanger Fan and Blower Co., 1241 18th St., Detroit, is devoting all facilities and resources to the manufacture of ventilation, man cooling and processing equipment for plants engaged in producing for the war effort.—L. P. Halleck, Sales Manager.

Electric Arc, Inc., 152 Jeliff St., Newark, N. J., has a number of contracts with the Army, Navy, Department of Agriculture, Forest Service, Marine Corps for induction heating for shipbuilding, power houses, armor plating, and general prevention of cracking and warping.

Skuttle Mfg. Co., Detroit 26, Michigan, has 22 employees in the armed forces. The company is doing sub-contract work on aircraft, glider and gun parts. All present business consists of war orders.

Skuttle moved the first part of July to larger quarters at 517 E. Larned Street, Detroit.

All employees are buying 10 per cent of their wages in war bonds.

One of the Skuttle men—Bernard Cook—was reported missing at the Battle of Midway.—R. W. Geisler, VP. & Secy.

Wagner Electric Corporation, 6400 Plymouth Avenue, St. Louis 14, has about a dozen sales-engineers in the services. Most of these were reserve officers during prewar days, and were naturally called to the colors when we got into war. There are also about a half-dozen engineers in the services—also reserve officers.

Many former employees have seen action. There are some 1200 Wagner employees in the service, and of these at least 250 are overseas at the fighting fronts, or close enough to be considered "in action."

The company received the Army-Navy "E" on February 20, and again on September 11.—C. B. Dietrich, Adv. Mgr.

Lieut. Thomas R. Mutz, son of Frank Mutz, vice-president of Peerless Foundry Company, 1853 Ludlow Avenue, Indianapolis, together with Captain William E. Crowe of Austin, Texas, plunged into a hornet's nest of 135 Jap planes near Vella Lavella island on August 18 and shot down four and probably knocked out four others.

A month earlier, Lt. Mutz figured in a story from Guadalcanal in which he was wounded while battling Zero planes. Several times Lt. Mutz's plane has been riddled by enemy aircraft bullets.

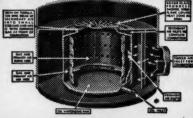
In this last conflict, he counted 35 bullet holes in his ship and had but three gallons of fuel left, after making a dead stick landing.

Famous Patented Monogram Vaporizing Burner
Provides Highest Known Operating Efficiency with Oil
Full Forced Utility

Booster Gravity Units

Winter Air

Conditioners



Room Units

Automatic Water Heaters

The QUINCY STOVE MFG. COMPANY, Quincy, Illinois

## TRADE NEWS &

John E. Hartmann, vice president of the Hartmann Co., Inc., Terre Haute, Indiana, who was inducted into the service on December 27, 1942, is now stationed at Camp Somerset, Westover, Md.

Standard Sheet Metal Works, Milwaukee, has the following men in service:

Burton Neubauer, helper, now at Miami Beach, Fla. Salvader Gonzalez, welder, now at Camp Robinson, Ark. (recently awarded a sharpshooter's medal for getting 168 out of a possible 200).

Pvt. Albert Blaski, nephew of the proprietor of the Blaski Mfg. Company, 4132 W. Belmont, Chicago—manufacturers of ventilating skylights—is a sheet metal aircraft worker at March Field, California, being recently transferred into ground crew aviation. The work, he says, is quite different from regular sheet metal work.

Detroit Furnace & Stove Repair Co., 45-year-old jobbers of Detroit, Michigan, has recently lost the following men to the armed forces:

Pfc. George J. Gracey
Pvt. Alex Wrublewski

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Pyt. Vincent Bourgeois 2nd Lt. Wm. Faleris Pyt. Francis Gracey

Cpl. A. J. Straub Pvt. Harry Norkiewicz

Pvt. Francis Gracey
Pvt. Joseph Gracey

Able Seaman Robert Theuer

Paul E. Floyd has returned from Washington to resume his former position as District Manager in the Chicago Branch Office of the Allegheny Ludlum Steel Corporation, according to Russell M. Allen, General Manager of Sales.

For more than a year past, Mr. Floyd has filled a responsible post in the Iron & Steel Branch of the War Production Board. Allegheny Ludlum had granted him a leave of absence for the purpose in early 1942, at the war agency's request, and Mr. Allen stated that WPB recently consented to release Mr. Floyd in order that he might return to active duty in his former capacity.

Fitzgibbons Boiler Company, Inc., 101 Park Avenue, New York City, has been awarded the Army-Navy "E."

The Fitzgibbons plant had to completely convert its facilities from steel boilers and conditioners to types of war production bearing very slight relationship to the former products. It is a far cry from the building of steel boilers to the making of huge "General Sherman" tanks, the fabricating of armor plate gun shields and platforms, etc. Much new equipment had to be built and installed, delays circumvented, workers trained.

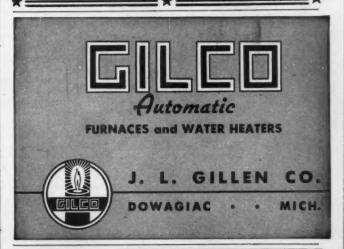


SPEED UP ORDERS

## BEVERLY

Throatless shears that cut any shape . . . straight, circular or irregular. FASTER — Precision — accuracy! Order No. 1 for 14 gauge. No. 2 for 10 gauge. No. 3 for 3/16 inch mild steel and 10 gauge stainless.

BEVERLY SHEARS CO. 300 W 116th PL, Dept. 1 CHICAGO, ILL.



#### TORNADO FURNACE CLEANERS

Are Still in Demand but Are Not Available

#### UNTIL AFTER THE WAR

The manufacture of TORNADO Furnace and Boiler Cleaners was, as you doubtless know, discontinued some time ago to make way for "essentials" on which our efforts are now concentrated.

After the war, these Cleaners will resume their rightful place not only for cleaning purposes, but for keeping you in touch with the fuel and stoker needs of your customers.

BREUER ELECTRIC MFG. CO. 5082 Ravenswood Ave., Chicago, Ill.



While our machinery spins to turn out the goods of war, our drafting rooms and experimental laboratories hum with activity on post-war heating and air-conditioning products. We'll be ready for the post-war period; you can depend on this.

CONCOCORPORATION
Division of H. D. Conkey & Co.,
Mendota, III.

REPLACE FURNACES ONLY WHEN NECESSARY

#### REPAIR IF AT ALL POSSIBLE

USE GENUINE

## NIAGARA

FURNACE REPAIR PARTS

2500 WEST 27th ST., CLEVELAND 13, OHIO

### BARBER BURNERS

For ALL Gas Appliances



Our facilities are now mainly employed on war work. For those limited purposes for which our regular line of products is permitted, we shall continue to supply them. Later, when normal conditions are restored, Barber will furnish its customary service to the trade on high quality Burners and Regulators.

Latest Catalog on request.

THE BARBER GAS BURNER CO.
3704 Superior Ave., Cleveland, Ohio

Stokers
Handy
Fittings
Repairs

FURNACES

NONE BETTER Blowers

Blowers Rock Island Registers Humidifiers

\*\*Repairs Humidifiers All genuine Gilt Edge repairs carry a label saying "Genuine Gilt Edge Part." We have genuine Gilt Edge Part." We have genuine Gilt Edge repairs for Gilt Edge Hummer, Gilt Edge Crescent, Gilt Edge Radium, Gilt Edge Badger, Gilt Edge Liberty, Gilt Edge Solar, Gilt Edge Fireside, 500, 600, 700, 800 and 900 Series Furnaces and Gilt Edge Round and Square Boilers. We are successors to the Schwab & Sercomb Co., R. J. Schwab & Sons Co., and the Schwab Furnace & Mfg Co. Buy from jobbers who carry genuine Gilt Edge repairs or write us. We can furnish a Gilt Edge Furnace on the proper priority.

SCHWAB FURNACE CO.

193 SO. SECOND STREET MILWAUKEE 4, WIS.





NAME OF YOUR NEAREST DISTRIBUTOR

Directive for Wartime Construction dated May 20, 1942, which established these principles is hereby confirmed."

Simultaneously, a Facilities Committee was established to carry out this policy. Membership of the Facilities Committee will consist of representatives of the War Production Board, War Department, Navy Department, United States Maritime Commission, Army Air Forces, Navy Bureau of Aeronautics, and Office of Civilian Requirements.

In curtailing nonessential construction, WPB is seeking to trim as much as possible from a program that last year cost more than \$14,000,000,000. In addition, it is seeking to divert into channels which will contribute directly to winning the war the vast amounts of material and labor which formerly had been expanded in the large public and private construction program.

#### **Much Material Used in 1943**

In emphasizing the need for a continuing curtailment, WPB has pointed to the drain on the country's resources caused by the 1942 construction program, which at times took nearly 3 million men from the country's labor force. It consumed approximately 13 million tons of cast iron and steel in the form of finished products, which meant it took a pig and ingot capacity of 18 million tons. It took about 180 million barrels of cement, nearly 160,000 short tons of copper in finished products, nearly 190,000 short tons of lead, nearly 75,000 short tons of zinc, and more than 211 billion board feet of lumber. These figures do not include maintenance and repair. This use of manpower and materials cannot be permitted under conditions which now exist.

Among the types of projects which often divert materials, equipment and manpower from direct war work, and which have been ordered deferred until after the war if determined nonessential, are highways, waterworks, sewage, hospitals, schools, office buildings, river and harbor improvements, recreation and other similar projects. Many civil improvements which were justified before the war are found to be totally unwarranted in war-time, and these are being deferred.

Where industrial projects are concerned, chief emphasis is being placed now on utilization of existing facilities.

Wherever construction is curtailed, whether industrial or otherwise, labor and materials are released for use on direct military production. This is the current goal of the War Production Board.

## SPOT WELD

## ACME "Hot Spot" WELDER

Proven utility for over 26 years in thousands of sheet metal fabricating plants.

Write for Literature and Prices.

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ACME ELECTRIC WELDER CO.
2618B Fruitland Road Los Angeles, Calif.



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Better for Every Spraying Purpose

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Marley nozzles lead all in sales and in profits to you. \* Finer, more uniform spray.

\*Effective operation at Low Pressures. \* No internal parts

MARLEY CO., INC. Kansas City, Kansas

SERVICE SECTION: Rates for display space in the Service Section are \$5.00 per inch per insertion. One-inch minimum space accepted.

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#### HELP WANTED

SALESMAN WANTED—Successful, experienced territory manager, draft exempt, to call on dealers in established territory for leading furnace manufacturer. Salary, traveling expenses, with additional liberal bonus plan. An excellent position with unlimited possibilities for earning and advancement. Please enclose photo with application. Address Key 573, American Artisan, 6 No. Michigan Ave., Chicago 2, Ill.

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MORE HEAT FOR HITLER! TURN IT ON WITH **MORE BONDS!** 

YAGER'S Soldering Salts — Paste

Reg.
Two standard fluxes for all soft soldering. Safe, quick, certain. Buy them at your jobbers or write us if he cannot supply you.

1/2 lb., 1 lb., 5 lb., cans; 2 cz., 6 cz., 12 cz.

ALEX. R. BENSON CO., INC., HUDSON, N. Y.

#### FANS BLOWERS **EXHAUSTERS**

"Lungs for Industry"

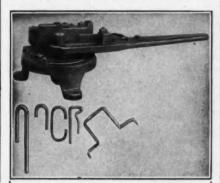
REBUILT and GUARANTEED

Prompt Shipments From Large Stocks All Types—All Makes—All Sizes And We Really Rebuild 'Em

#### Why Wait Months for New?



GENERAL BLOWER CO. Phones: MONroe 0244 403 NORTH PEORIA ST. CHICAGO 22, ILL.



#### THE HINMAN BENDERS

Angle & U, Eye and Pipe Write for catalog. manufactured by

L. R. EVANS MACHINE COMPANY SANDWICH, ILLINOIS

## Save Money, Time and Muscle part mown, time and mester Drill Competer by the "Do-All" Combination Electric Hammer and Drill. Set expansion bolts 16 to 26 times faster than with hand tools. Drills concrete, brick, stone, metal, wood. Easy to maintain. Weighs 15 bis. Drills to 18;" in concrete. 2400 blows per min. Bulletin 400. Phone Austin 1946. Austin 9866. WODACK ELECTRIC TOOL CORPORATION 4844 W. Huron St., Chicago, III.

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Electric welding equipment of every description to weld from a watch case to a door. Special we standard SFOT WELDERS from % to 500 R.V.A. A.C. Arc Welders from 100 to 400 Amps. We invite contract Spot Welding in large or small quantities

EISLER ENGINEERING CO.

CHAS. EISLER 761 S. 13th St. (Near Aven Ave.) Newark, N. J.

#### NEW Improved PENTCO

Compound Action AVIATION — SHEET METAL and ELECTRICIAN SNIPS **OUALITY PRECISION TOOLS** 



Maximum power, minimum effort.

Combination, Right and Left, No. 185-190-195.

Blades made from alloy steel. Hardened and tempered for rough use. Will cut with ease all grades of steel. Side locking feature that will not interfere with cutting blades.

Case hardened bolts. IMMEDIATE DELIVERY Write for Circular

#### PENN TOOL CO.

2415 N. Howard St., Philadelphia, Pa.

#### QUICK DELIVERY!

BRAKES POWERS: 10'%", 8'10 ga.; 8'14 ga.; 6'12

POWERS: 10'%", 8'10 ga.; 8'14 ga.; 6'12 ga.
HAND: 8'18, 6'18, 6'16 ga., 5'20 ga.
FOLDERS
36", 30", 20" PEXTO & NIAGARA.
60" NIAGARA POWER PIPE.
FLOOR LATHES
22"x12 ft. LODGE SHIPLEY GD. HD.
24"x15' NEW HAVEN. 14"x16' ROBBINS
MILLS
PLAIN: No. 2B K&T DOUBLE OVERARM, No. 2 CINCINNATI.
VERTICALS: No. 2'% B K&T & No. 2 B&S.
UNIVERSALS: No. 2 B&S; No. 1-D
B&S, No. 1'% HENDEY NORTON.
FUNCHES
HAND: No. 12 WHITNEY, %"x%"; No.
56 NIAGARA, %"x\"; No.
20 EXCELSIOR, No. 135A NIAGARA.
PRESS BRAKES
OHL: 10'14, 4'16, 5'16, 4'16 ga.

DOUBLE CRANK PRESSES
No. 4-80 W&W 10" stroke; 4" shaft.
No. 166-C CONSOLIDATED, 4" Stroke.
No. 92-½ H. TOLEDO, 6" Str., 5" Shaft.

ROLLS
ANGLE: 6x6x%" WICKES.
LEVELLER: 5' NILES.

EVELLER: 5' NILES.

SHEARS

POWER: 10'3 dia. 16" NIAGARA: 10' 16

POWER: 10'3 dia. 16" NIAGARA: 10' 10
ga.
OHL; 30" NIA, FOOT; 36" NIA.,
Curved Blades.
ROTARY: 14 ga. QUICKWORK & YODER
SPOT WELDERS
250 KVA FEDERAL PRESS TYPE.
20 & 30 KVA GIBB PRESS TYPE.
7½ KVA IDEAL; 10 KW FEDERAL.
MISCELLANEOUS ITEMS
2—GALLAND HENNING SCRAP
BALERS.
No. 727 PEXTO FOOT NOTCHER, No.
0 GRAY NIBBLER, ¼" Cap.

MACHINERY CO., INC. YARDS 5800 INTERSTATE 1433 W. PERSHING RD., CHICAGO 9, ILL.

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THERE'S no sense in ever letting yourself be put in the doghouse, but if it ever does happen, you'll find out just how important automatic control — which makes automatic heating automatic—really is. M-H Automatic Control gives you exactly the temperature you need or desire exactly when you want it — and does it with-

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YOUR FURNACE AIR FILTERS A COLOR MARCHINE

RESEARCH AIR FILTERS

Write for details of this
"TIME TO CHANGE"

Advertising-Merchandising Plan

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